57300-3-4

1986
South Dakota
Motor Vehicle Traffic Accident Summary

Prepared By
Department of Commerce and Regulation
Highway Safety Program and
Department of Transportation
Accident Records Section

George S. Mickelson
Governor

STATE OF SOUTH DAKOTA

GEORGE S. MICKELSON
GOVERNOR

EXECUTIVE OFFICE
STATE CAPITOL BUILDING
PIERRE, SOUTH DAKOTA 57501

(605) 773-3212

May 15, 1987

Dear Reader:

It is a pleasure for me to introduce the 1986 edition of the South Dakota Motor Vehicle Accident Summary and to compliment the work of dedicated South Dakotans in traffic safety. In 1986, South Dakota's motor vehicle fatality rate fell to its lowest level ever recorded, less than two deaths per 100 million vehicle miles traveled.

The reasons for the increasing safety of travel on roadways are many. They include the work of traffic enforcement personnel in detecting and apprehending drinking drivers and speeding drivers. Traffic engineering professionals are working to build safer roads and eliminate hazardous locations. Additionally, the public's increased awareness of the costly and tragic results of traffic crashes leads to more responsible behavior behind the wheel.

The traffic safety program in South Dakota is functioning at a high level and is returning many benefits to our citizens. I look forward to even greater achievements in the future. Please drive defensively and buckle up.

Very truly yours,

GEORGE S. MICKELSON

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I. INTRODUCTION

The South Dakota Motor Vehicle Accident Summary was developed to provide an overview of the South Dakota traffic accident picture, as well as make frequently requested information available. Information from 1986 comprises the major portion of the book; however, basic historic trends are also provided for reference.

The Motor Vehicle Accident Summary is divided into two main sections, Historical Trends and 1986 Motor Vehicle Accident Profile. The Historical Trend section provides information on alcohol involvement in motor vehicle accidents and results of South Dakota's efforts to combat the drinking driver. This section also provides data on restraint usage and accident trends. The 1986 Accident Profile section details the accident picture for 1986 as well as a glossary of terms.

The majority of the information in this book is provided by the Accident Records Section within the Department of Transportation. Current state law requires an accident report be filed for each motor vehicle traffic accident resulting in the death or injury of a person, or property damage to an apparent extent of five hundred dollars or more to any one person's property or one thousand dollars accumulated damage per accident. Law enforcement agencies provide the accident reports to Accident Records. These reports are available to the public for a fee of two dollars.

Examples of reports available through Accident Records are:

STANDARD REPORTS - These reports provide the user with a standard set of summary information for a preselected subset of all accidents, e.g., all accidents involving a drinking driver.

PLOT MAPS - These maps supply the user with a graphic display on which the location of each accident in a given geographic area has been plotted on transparent paper and scaled to overlay maps provided by the Department of Transportation.

SPECIAL REQUESTS - Special requests are answered using several computer packages, one of which is an on-line query system which provides almost immediate response to requests of a very specific nature.

For additional information or copies, write or call:

Accident Records Section
118 West Capitol Avenue
Pierre, SD 57501-2080
Phone: (605) 773-3868

-OR-

Office of Highway Safety
118 West Capitol Avenue
Pierre, SD 57501-2080
Phone: (605) 773-3675

SOUTH DAKOTA

STATISTICAL SUMMARY

1986

NUMBER OF REPORTED MOTOR VEHICLE TRAFFIC ACCIDENTS: 13,714

AMOUNT OF MOTOR VEHICLE TRAFFIC ACCIDENT PROPERTY DAMAGE: $35 million

NUMBER OF MOTOR VEHICLE TRAFFIC ACCIDENT INJURIES: 6,008

NUMBER OF MOTOR VEHICLE TRAFFIC ACCIDENT FATALITIES: 134

ECONOMIC LOSS FROM MOTOR VEHICLE TRAFFIC ACCIDENTS: $85 million

PERCENT OF DRIVERS IN FATAL ACCIDENTS WHO HAD BEEN DRINKING: 38.4%

NUMBER KILLED IN ALCOHOL-RELATED ACCIDENTS: 74

NUMBER INJURED IN ALCOHOL-RELATED ACCIDENTS: 1,214

NUMBER OF PEDESTRIANS KILLED: 15

NUMBER OF MOTORCYCLISTS KILLED: 10

NUMBER OF BICYCLISTS KILLED: 1

PERCENT OF LICENSED DRIVERS UNDER 25: 20%

PERCENT OF ACCIDENT-INVOLVED SPEEDING DRIVERS UNDER 25: 56%

PERCENT OF ACCIDENT-INVOLVED DRINKING DRIVERS UNDER 25: 52%

NUMBER OF DWI CONVICTIONS: 6906

NUMBER OF FELONY DWI STATE PENITENTIARY INMATES: 63

SEATBELT USE RATE OF ACCIDENT-INVOLVED DRIVERS: 14.6

HELMET USE RATE OF ACCIDENT-INVOLVED MOTORCYCLISTS: 28.3%

NUMBER OF UNRESTRAINED CHILDREN UNDER 5 YEARS OF AGE KILLED IN MOTOR VEHICLE ACCIDENTS: 3

NUMBER OF PROPERLY RESTRAINED CHILDREN UNDER 5 YEARS OF AGE KILLED IN MOTOR VEHICLE ACCIDENTS: 1

AVERAGE TRAVEL SPEED ON SOUTH DAKOTA HIGHWAYS: 57.8 MPH

PERCENT OF MOTORISTS EXCEEDING 55 MPH: 52.2%

II. HISTORICAL TRENDS

Motor Vehicle Accidents

The fatality rates per 100 million vehicle miles traveled from 1977-1986 for South Dakota, states surrounding South Dakota, and the nation are shown in TABLE 2-1. South Dakota's rate, the national rate, and the rate of those states bordering South Dakota have all shown a decline over the last ten years. FIGURE 2-1 compares South Dakota with the national rate and two comparable rural states, North Dakota and Wyoming.

TABLE 2-1
FATALITY RATE COMPARISON
1977-1986

State	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
South Dakota	3.7	3.3	3.8	4.2	3.2	2.7	2.7	2.2	2.0	2.0
Iowa	3.4	3.3	3.5	3.4	3.3	2.5	2.6	2.1	2.3	2.2
Minnesota	3.0	3.4	3.0	3.0	2.7	2.0	1.8	1.8	1.8	1.7
Montana	4.9	3.9	5.0	4.9	4.8	3.8	4.0	3.2	3.0	2.9
Nebraska	2.9	2.8	2.8	3.5	3.3	2.3	2.2	2.4	2.0	2.3
North Dakota	3.6	3.5	2.5	2.9	3.0	2.8	2.2	1.9	1.6	1.8
Wyoming	5.6	5.2	5.2	5.2	5.4	3.9	3.4	3.1	2.9	3.2
National	3.3	3.3	3.3	3.4	3.2	2.8	2.6	2.6	2.5	2.5

Note: Fatality Rate is the number of traffic fatalities per 100 million vehicle miles traveled.

Source: Department of Transportation: Accident Records

TABLE 2-2 provides a yearly comparison of South Dakota's motor vehicle traffic accidents from 1960 through 1986. Any comparison of motor vehicle accidents must be made with caution due to the changes in the definition of a reportable accident. For example, in the late 1970's the definition of a fatality caused by a motor vehicle accident was changed from the death occurring up to one year after the accident to death occurring within 30 days after the accident. Although this would not change the fact that the number and rate of fatalities has shown a steady decline, the decline in the last few years would not have been as much. There does not appear to be a single reason why there are fewer fatalities; however, the national 55 mph speed limit law initiated in 1974 and the increased efforts in the drinking driving area in 1981 have probably had the most impact. Other factors include improvements in the highways, safer vehicles, and traffic enforcement efforts. Also of importance is the fact that both the number of registered motor vehicles and the vehicle miles traveled continue to increase.

FIGURE 2-1 FATALITY RATE COMPARISON

1977 - 1986

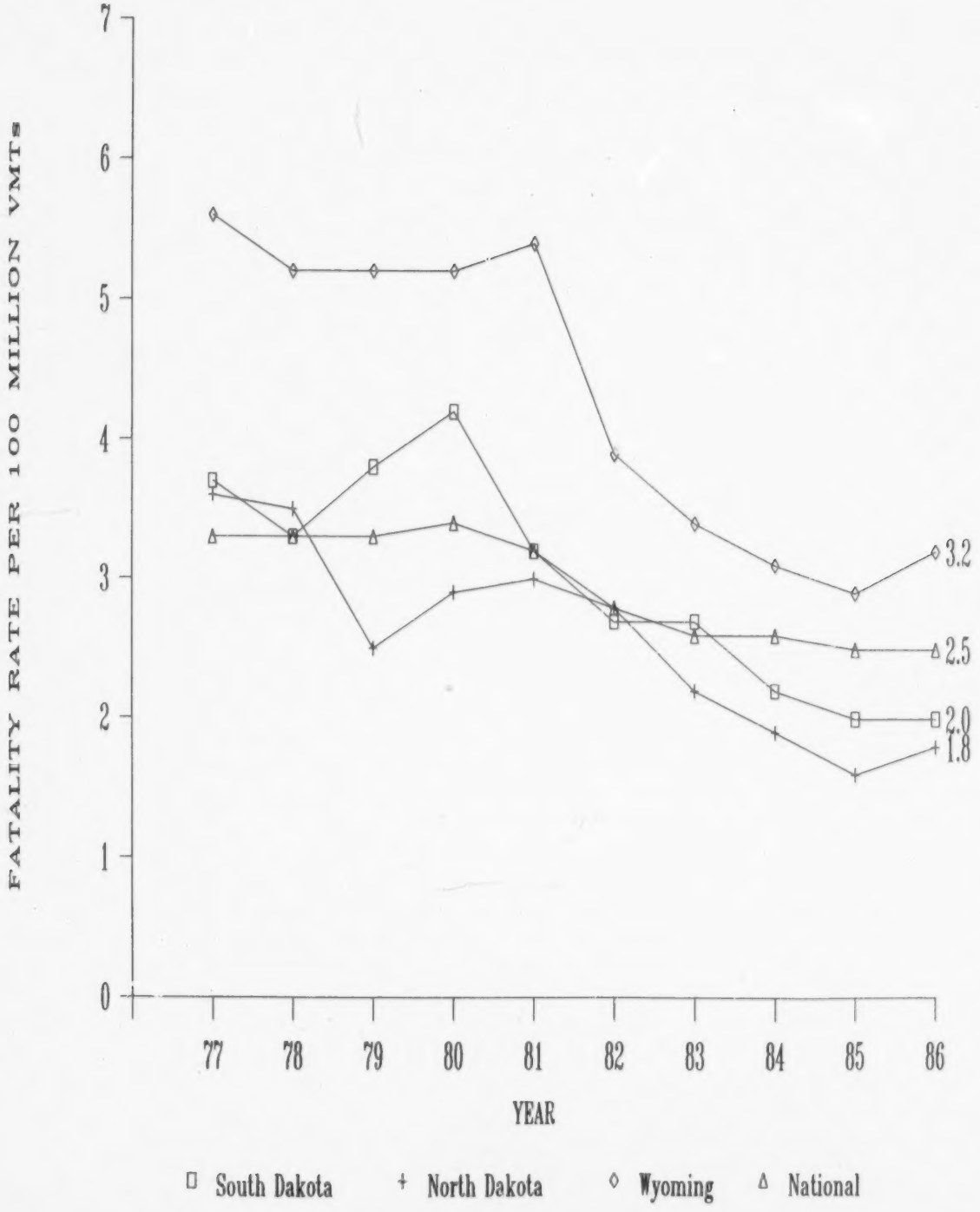


TABLE 2-2
SOUTH DAKOTA YEARLY COMPARISON
OF MOTOR VEHICLE TRAFFIC FATALITIES, INJURIES,
ACCIDENTS, MILES TRAVELED, & REGISTERED MOTOR VEHICLES

Year	Fatalities	Rate[1]	Injuries	Total Accd.	Fatal Accd.	Injury Accd.	PDO[2] Accd.	Miles[3] Traveled +(000,000)	Registered Motor Vehicles +(000)
1960	233	6.94	3,656	7,187	191	2,121	4,875	3,359	351
1961	228	6.75	3,848	7,281	184	2,313	4,784	3,379	361
1962	246	6.77	4,248	8,805	191	2,592	6,022	3,631	377
1963	220	5.83	4,123	8,874	185	2,530	6,159	3,776	386
1964	270	7.03	4,569	9,349	211	2,816	6,322	3,839	387
1965	244	6.13	4,685	10,015	194	2,880	6,941	3,983	396
1966	265	6.50	5,072	10,821	205	3,087	7,529	4,075	402
1967	224	5.41	5,286	12,154	183	3,250	8,721	4,142	407
1968	255	5.91	5,612	14,061	215	3,396	10,450	4,313	409
1969	296	6.79	5,921	16,565	219	3,584	12,762	4,361	422
1970	238	5.12	5,492	16,165	189	3,395	12,581	4,648	427
1971	262	5.36	6,705	16,995	210	4,152	12,633	4,884	444
1972	294	5.83	6,718	17,883	235	4,267	13,381[2]	5,039	467
1973	286	5.57	6,774	14,985	228	4,321	10,436[2]	5,136	494
1974	229	4.47	6,211	11,727	203	4,077	7,447[2]	5,126	519
1975	198	3.82	6,769	15,146	163	4,398	10,585[2]	5,186	533
1976	224	4.07	7,423	15,755	188	4,840	10,727	5,503	554
1977	211	3.67	7,603	18,020	180	5,013	12,827[2]	5,754	575
1978	194	3.33	7,861	18,085	168	5,263	12,654[2]	5,830	599
1979	211	3.76	7,189	16,059	169	4,826	11,064	5,614	616
1980	228	4.18	7,147	14,845	188	4,770	9,887	5,456	622
1981	177	3.17	6,771	14,375	162	4,614	9,599	5,582	637
1982	148	2.68	6,174	14,605	129	4,192	10,284	5,528[3]	640
1983	175	2.73	6,287	14,971	147	4,175	10,649	6,406	655
1984	143	2.24	6,158	15,093	132	4,297	10,664	6,394	669
1985	130	2.02	6,240	15,435	109	4,229	11,097[2]	6,443	674
1986	134	1.98	6,008	13,714	118	4,105	9,491[2]	6,762	686

[1]Number of fatalities per 100 million vehicle miles traveled.

[2]Prior to July 1, 1973 the threshold for a reportable property damage only (PDO) accident was $100 to one person's property. July 1, 1973 the PDO amount was increased to $250.

January 1, 1975, the PDO threshold definition changed to accumulated property damage of $250 or more. July 1, 1978 the PDO threshold was increased to $400 accumulated property damage.

July 1, 1986, the PDO threshold definition changed to $500 damage to any one person's property or $1000 accumulated property damage per accident.

[3]1983 the formula for computing VMTs was adjusted, resulting in an approximate 9.5% increase in annual VMTs.

Source: Department of Transportation: Accident Records

Alcohol Involvement

Alcohol continues to be a significant factor in motor vehicle accidents, especially the serious accidents involving death and injuries (see TABLE 2-3 and FIGURES 2-2 and 2-3). In 1986, over half of the motor vehicle fatalities and one out of five injuries were the result of an alcohol-related accident.

TABLE 2-3
ALCOHOL INVOLVED ACCIDENTS AS PERCENT OF ALL ACCIDENTS

	1980	1981	1982	1983	1984	1985	1986
Total Accidents	17.4 (2588)	18.0 (2591)	14.0 (2044)	13.6 (2029)	13.2 (1993)	11.2 (1728)	11.5 (1577)
Fatal Accidents	55.9 (105)	61.7 (100)	59.7 (77)	49.0 (72)	53.8 (71)	51.4 (56)	54.2 (64)
Injury Accidents	27.0 (1286)	27.4 (1266)	22.2 (930)	22.4 (935)	20.8 (894)	19.2 (810)	18.7 (769)
PDO Accidents	12.1 (1197)	12.8 (1225)	10.1 (1037)	9.6 (1022)	9.6 (1028)	7.8 (862)	7.8 (744)
Fatalities	54.4 (124)	62.1 (110)	58.1 (86)	50.9 (89)	53.1 (76)	53.1 (69)	55.2 (74)
Injuries	29.3 (2094)	29.0 (1964)	23.5 (1453)	24.3 (1528)	22.3 (1371)	20.5 (1280)	20.2 (1214)

NOTE: 1980-1982: Alcohol involvement for PDO and Injury Accidents is based on an indication of alcohol use as reported by the investigating officer.

Alcohol involvement for Fatal Accidents is based upon a positive BAC result and/or indication of alcohol use as reported by the investigating officer.

1983-1986: All Accidents - At least one driver, pedestrian or bicycle driver had been drinking in the opinion of the investigating officer.

Source: Department of Transportation: Accident Records

FIGURE 2-2 1986 TRAFFIC FATALITIES

ALCOHOL-RELATED vs NONALCOHOL-RELATED

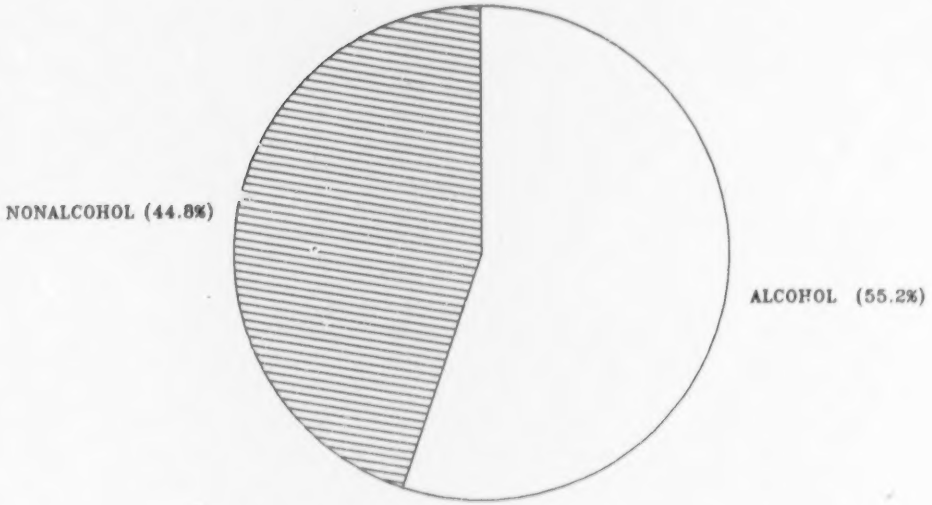


FIGURE 2-3 1986 TRAFFIC INJURIES

ALCOHOL-RELATED vs NONALCOHOL-RELATED

The State of South Dakota initiated a statewide effort during 1981 to increase the DWI enforcement and public awareness efforts. The numbers of persons killed and injured in alcohol-related accidents have declined since 1981. The following accident and arrest data is presented to quantify the reduction of alcohol-related fatal and injury accidents and to compare that reduction to the nonalcohol-related accident experience (see TABLE 2-4).

TABLE 2-4
ACCIDENT AND ARREST ACTIVITY
1979 - 1986

	FATAL ACCIDENTS		FATAL & INJURY ACCIDENTS		
	ALCOHOL RELATED	NONALCOHOL RELATED	ALCOHOL RELATED	NONALCOHOL RELATED	DWI ARRESTS
1979	94	75	1216	3779	4136
1980	105	83	1391	3567	4151
1981	100	62	1366	3410	5068
1982	77	52	1007	3314	6842
1983	72	75	1007	3315	9840
1984	71	61	965	3464	9972
1985	56	53	866	3472	9363
1986	64	54	833	3390	9318

Source: Department of Transportation: Accident Records

FIGURE 2-4 presents the annual counts of DWI arrests, alcohol-related fatal and injury accidents, and nonalcohol-related fatal and injury accidents for 1979 to 1986. FIGURE 2-5 presents the alcohol-related and nonalcohol-related fatal accident experience.

To facilitate comparison of 1986 accident and arrest experience, a baseline three-year average (1979-81) and the previous three-year average (1983-85) are presented in TABLE 2-5. Additionally, TABLE 2-5 includes the percentage change in 1986 accident and arrest levels from the baseline three-year average, the previous three-year average, and the prior year. See Figure 2-6 for a graphic comparison of the percentage change of the 1986 levels.

There were 64 alcohol-related fatal accidents during 1986, which compares to 56 in 1985. The previous three-year average was 66 and the baseline average was 100. Alcohol-related fatal accidents were down 36 percent when compared to the baseline three-year average, while nonalcohol-related fatal accidents declined 26 percent during the same period.

There were 833 alcohol-related fatal and injury accidents during 1986, which compares to 866 in 1985. The previous three-year average was 946 or a 12 percent decrease in 1986. Nonalcohol-related fatal and injury accidents in 1986 decreased one percent from the previous three-year average.

There were an estimated 9,318 DWI arrests in 1986. This level is down slightly (4%) from the previous three-year average, but up 109% from the baseline period (1979-1981).

FIGURE 2-4 F&I ACCIDENTS AND DWIs

1979 - 1986

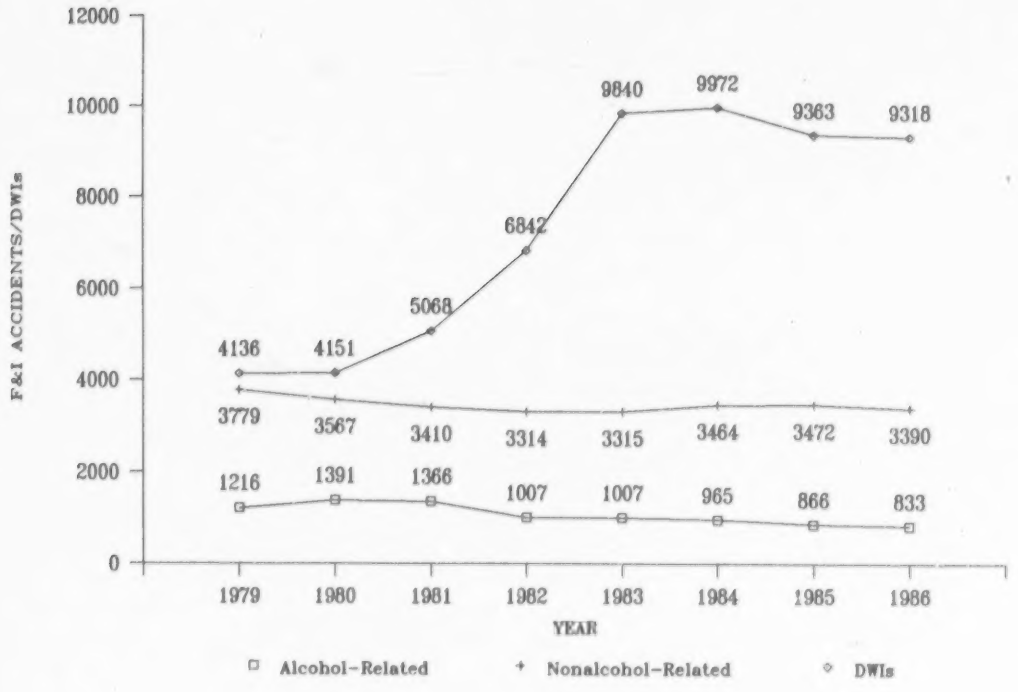


FIGURE 2-5 FATAL ACCIDENTS

1979 - 1986

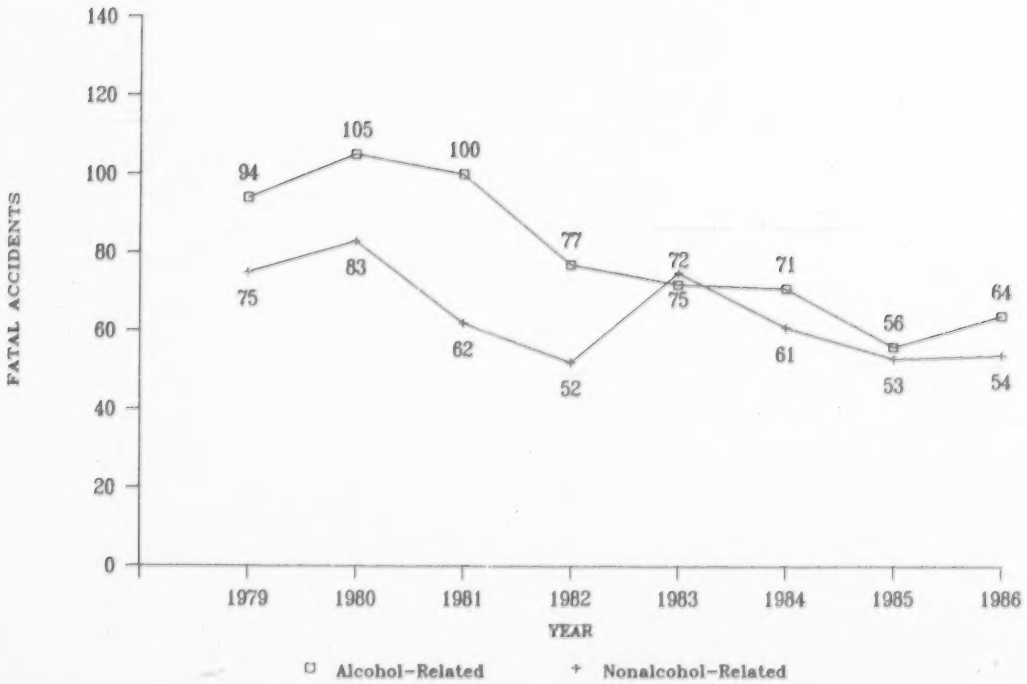
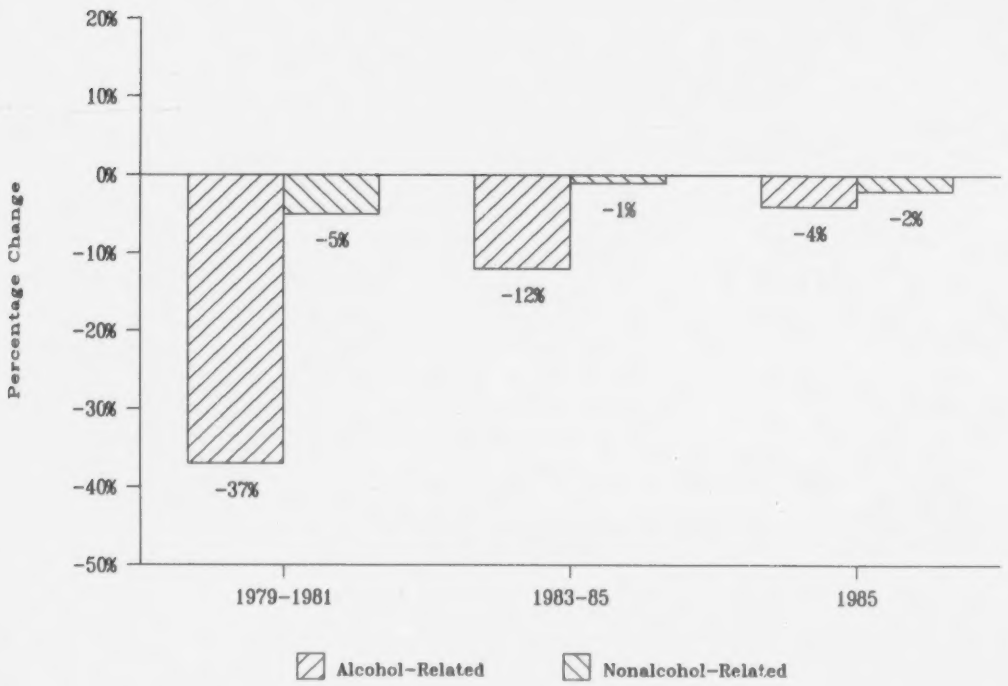


TABLE 2-5
COMPARISON OF ACCIDENT & ARREST ACTIVITY
(1979 - 1986)

	BASELINE 3-YR. AVG. (1979-81)	PREVIOUS 3-YR. AVG. (1983-85)	1985	1986	PERCENTAGE CHANGE OF 1986 LEVELS COMPARED TO: BASELINE 3-YR. AVG. (1979-81)	PREVIOUS 3-YR. AVG. (1983-85)	1985
Fatal Accidents							
Alcohol-Related	99.7	66.3	56	64	-36%	-3%	+14%
Nonalcohol-Related	73.3	63.0	53	54	-26%	-14%	+2%
Fatal & Injury Accidents							
Alcohol-Related	1324.3	946.0	866	833	-37%	-12%	-4%
Nonalcohol-Related	3585.3	3417.0	3472	3390	-5%	-1%	-2%
DWI'S	4451.7	9725.0	9363	9318	+109%	-4%	-1%

FIGURE 2-6 1986 F&I ACCIDENT LEVEL

COMPARED TO 1979 - 1985 LEVELS



Restraint Usage

Observation Survey

In 1986, the South Dakota Office of Highway Safety conducted an observation survey of seatbelt use in eleven South Dakota communities. Over 12,000 South Dakota motor vehicles with a total of 18,640 occupants were observed in these communities between April and July of 1986. A statewide estimate of restraint use was calculated using procedures based upon an average estimate from individual sampling communities that has been adjusted for population size and for roadtype. In this procedure, restraint use levels observed in the most populated areas and on the most traveled roads of the state are given the most "weight" in an overall average.

To find the 1986 estimate for restraint use in South Dakota, percentages of restraint use for each city/county area were calculated for four roadway types: city, county road, highway and interstate. Individual city/county rates for the four roadtypes were weighted (multiplied) by county population size. For this study, the proportion of the county population to that of the total state population was used as the weighting factor. When the weighted proportions of restraint use for roadtype for all 11 cities/counties were averaged together, the following use rates were found:

15.5% = Use Rate for City Roads and Streets
16.9% = Use Rate for County Roads
15.3% = Use Rate for Primary Highways
20.9% = Use Rate for Interstate Highways

These estimates of restraint use for roadtype were then multiplied by a weighting factor for the number of vehicle miles traveled (VMT) by roadtype in South Dakota. The following weights were derived from VMT estimates provided by the South Dakota Department of Transportation:

31% = VMT for Local Streets, Urban County, Highway and Interstate Roads
17% = VMT for Rural County and Secondary Roads
34% = VMT for Rural Primary Highways
18% = VMT for Rural Interstate Highways

The final state estimate was derived by the following calculations:

(15.5% x 31%) + (16.9% x 17%) + (15.3 x 34%) + (20.9% x 18%) /100

= **16.6% Estimated Statewide Rate of Occupant Restraint Use**

In summary, it was estimated that approximately 17 percent of occupants traveling on South Dakota public roads wore safety restraints during the time period in which the 1986 survey was conducted. Similar procedures were used to formulate a state estimate of restraint use for age group of occupants for all roadtypes combined. Individual city/county restraint use rates for three age groups were weighted for county population size and then averaged together. The following statewide estimates were obtained:

35.6% = Use Rate for Children 0 - 4 Years of Age
11.6% = Use Rate for Children 5 - 19 Years of Age
16.2% = Use Rate for Adults 20 Years and Older

Thus, two years after passage of a mandatory child restraint law, approximately 36% of children less than five years of age were protected by an occupant restraint while traveling South Dakota roads. See FIGURES 2-7 and 2-8 for a graphic portrayal of statewide occupant restraint use estimates for the 1986 survey.

Rankings of Cities/Counties By Restraint Use Rates

Occupant restraint use varied widely among the survey communities of South Dakota. The following table shows the cities/counties ranked by highest to lowest occupant restraint use rates for three age groups. The cities/counties of Winner-Tripp, Faulkton-Faulk, Isabel-Dewey, and Kadoka-Jackson were not ranked for the category of "Children 0 - 4" because less than 30 children were observed in these locations (see FIGURE 2-9).

Children 0 - 4 Yr		Children 5 - 19 Yr		Adults 20 Yr & Older	
Sioux Falls-Minnehaha	51%	Rapid City-Pennington	17%	Rapid City-Pennington	22%
Rapid City-Pennington	38%	Sioux Falls-Minnehaha	13%	Sioux Falls-Minnehaha	20%
Vermillion-Clay	28%	Yankton-Yankton	12%	Vermillion-Clay	14%
Yankton-Yankton	24%	Vermillion-Clay	11%	Isabel-Dewey	14%
Pierre-Hughes	23%	Isabel-Dewey	11%	Yankton-Yankton	11%
Aberdeen-Brown	12%	Winner-Tripp	10%	Faulkton-Faulk	10%
Watertown-Codington	6%	Faulkton-Faulk	7%	Pierre-Hughes	9%
		Pierre-Hughes	6%	Aberdeen-Brown	6%
		Aberdeen-Brown	4%	Winner-Tripp	6%
		Watertown-Codington	2%	Watertown-Codington	4%
		Kadoka-Jackson	0%	Kadoka-Jackson	0%

FIGURE 2-7 RESTRAINT USE

1986 STATEWIDE ESTIMATE

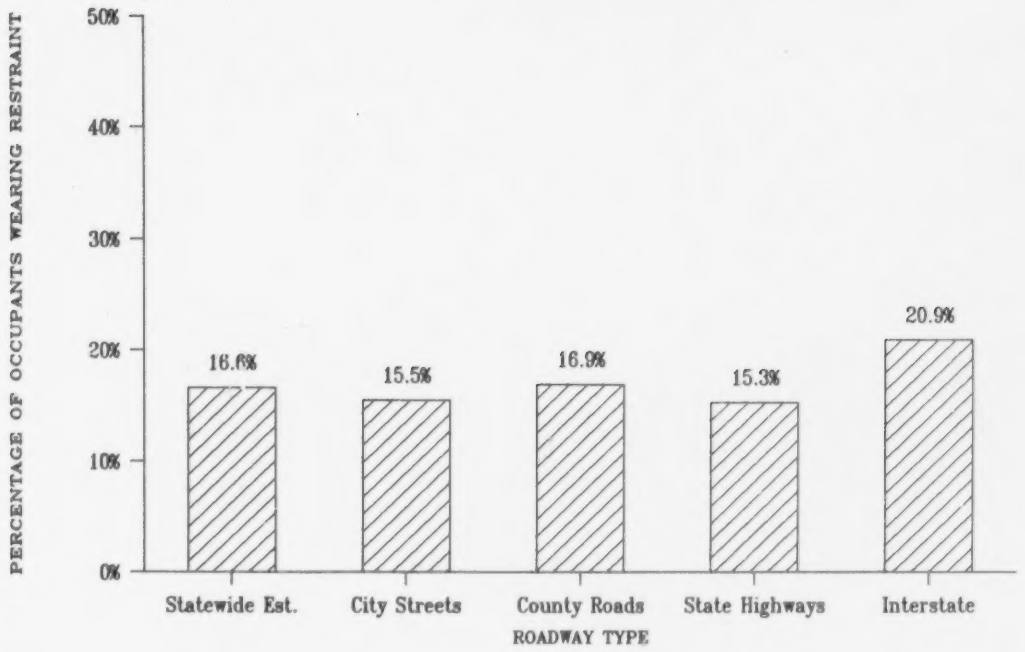
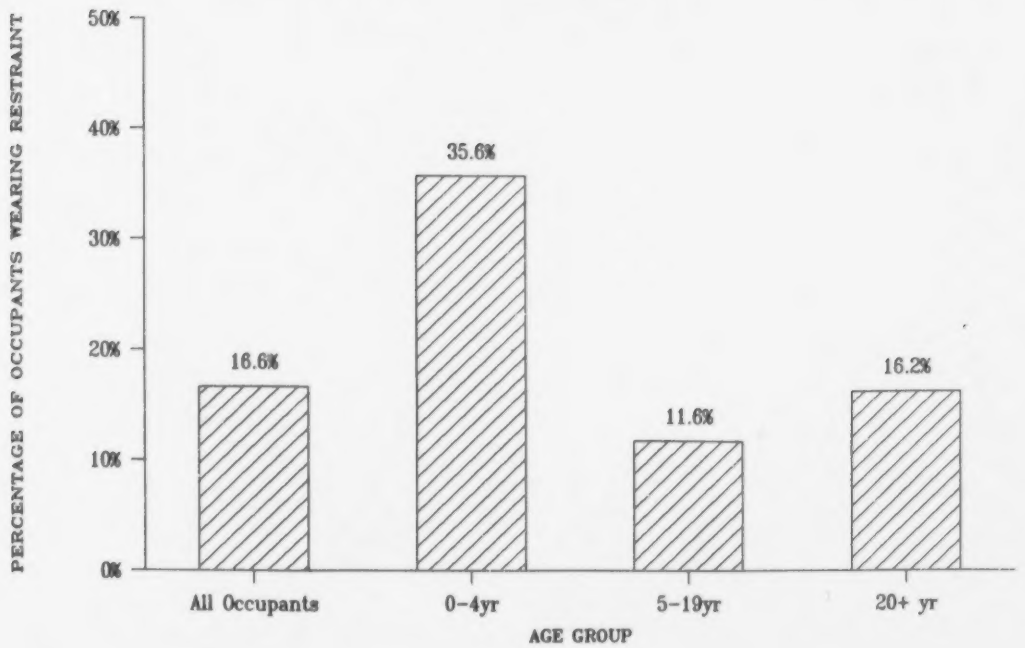


FIGURE 2-8 ESTIMATES OF RESTRAINT USE

BY AGE GROUP



Restraint use rates in the individual survey cities/counties of the state were extremely variable. The highest child restraint use rates were found in communities with the heaviest traffic conditions: Sioux Falls-Minnehaha County (51%) and Rapid City-Pennington County (38%). However, the relatively large communities of Aberdeen-Brown County and Watertown-Codington County showed low child restraint use rates of 12% and 6%, respectively. Statistical comparisons of rates on city streets in 1985 and 1986 surveys suggest that child restraint use is, at best, being maintained at 1985 levels. (Note: 1985 survey was limited to city street observation sites only.) No city showed any statistically significant increase in child restraint use rates between 1985 and 1986. Aberdeen showed a significant decline in child restraint use.

Rapid City-Pennington County had the highest use rate for older children (17%) and for adults (22%), followed by Sioux Falls-Minnehaha County with rates of 13% for older children and 20% for adults. The areas of Kadoka-Jackson County, Watertown-Codington County, Aberdeen-Brown County, and Winner-Tripp County all showed very low rates of restraint use for older children and adults (0% - 6%). Comparisons of city street rates for 1985 and 1986 showed that restraint use for older children and adults had significantly increased in Sioux Falls, Yankton, Pierre, and Vermillion.

In summary, the positive finding from the 1986 seatbelt and child restraint survey is that restraint use by older children and adults is increasing in the state, albeit at a slow rate. The negative finding is that restraint use for children four years and younger is approximately 36%, even though state law mandates 100% use for this age group. The level of child restraint use has not increased in the past year and may possibly have declined since 1985.

According to these results, the South Dakota mandatory child restraint law has had a minimal impact on citizens of the state. Two years after implementation of the law, nearly two-thirds of young children being transported on South Dakota roads are not protected by restraints. The low rates persist even in regions with active community restraint education and promotion programs. It appears at this time that child restraint use rates will not substantially increase in the state unless the existing law is enforced through issuing of warning tickets and/or is strengthened by the addition of a monetary or legal penalty for violation.

Restraint Usage - Accident-Involved Drivers/Injured Children

The use of safety equipment is reported on all motor vehicle drivers in an accident and only on those passengers who are injured. During 1986, 14.6 percent of the motor vehicle drivers in accidents were using safety restraints (see TABLE 2-6). Forty-seven drivers of motor vehicles were killed while not using any safety restraint, while three drivers were killed while using some type of safety restraint (does not include drivers of motorcycles, mopeds, and snowmobiles). Over 88 percent (2779) of the injured drivers were not using safety restraints.

TABLE 2-6
SAFETY RESTRAINT USAGE
ACCIDENT-INVOLVED DRIVERS
1983 - 1986

DRIVER AGE	USAGE RATE 1983	1984	1985	1986
14-15	3.2%	4.6%	4.2%	7.6%
16-17	2.0%	3.7%	4.8%	6.8%
18-20	4.3%	5.0%	7.0%	9.9%
21-24	6.4%	7.7%	10.9%	13.4%
25-34	8.5%	12.1%	14.3%	17.8%
35-44	8.3%	11.7%	14.4%	18.6%
45-54	8.7%	11.1%	13.1%	17.4%
55-64	6.9%	10.1%	12.2%	17.2%
65 & Over	5.8%	8.4%	9.7%	14.5%
Total	6.5% (1330)	8.9% (1805)	11.1% (2363)	14.6% (2718)

Source: Department of Transportation: Accident Records

The increased usage of safety restraints by accident-involved drivers is an indicator that usage is increasing in South Dakota across all age groups (See Figure 2-10).

Motor vehicle occupants from birth through four years of age accounted for four fatalities during 1986, which compares to five fatalities in 1985 and the previous three-year average of 4.0 (see TABLE 2-7). One of the children killed was restrained.

There were 121 children (birth through 4 years) injured in 1986, which compares to 122 in 1985 and the three-year average of 136.3.

TABLE 2-7
FATALITIES & INJURIES TO MOTOR VEHICLE OCCUPANTS
UNDER 5 YEARS OF AGE

YEAR	FATALITIES	SERIOUS INJURY	SLIGHT INJURY	TOTAL (NONFATAL) INJURIES
1981	0	107	44	151
1982	3	85	47	132
1983	5	86	63	149
1984	3	78	61	139
1985	4	74	50	124
1986	4	70	51	121

Source: Department of Transportation: Accident Records

FIGURE 2-9 RESTRAINT USAGE 1986

Selected Counties

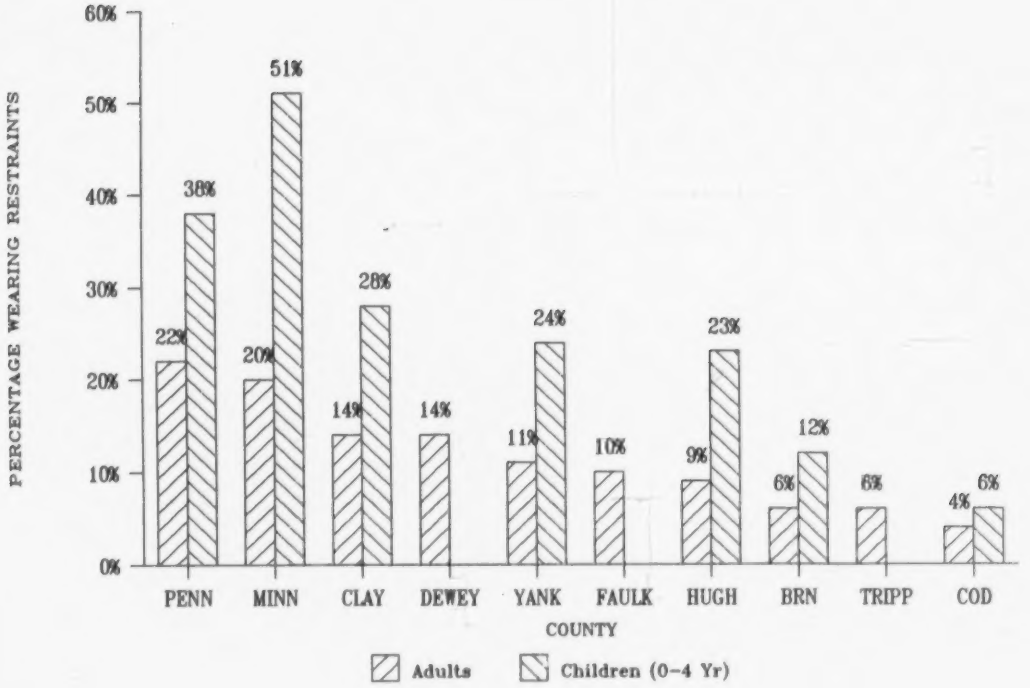
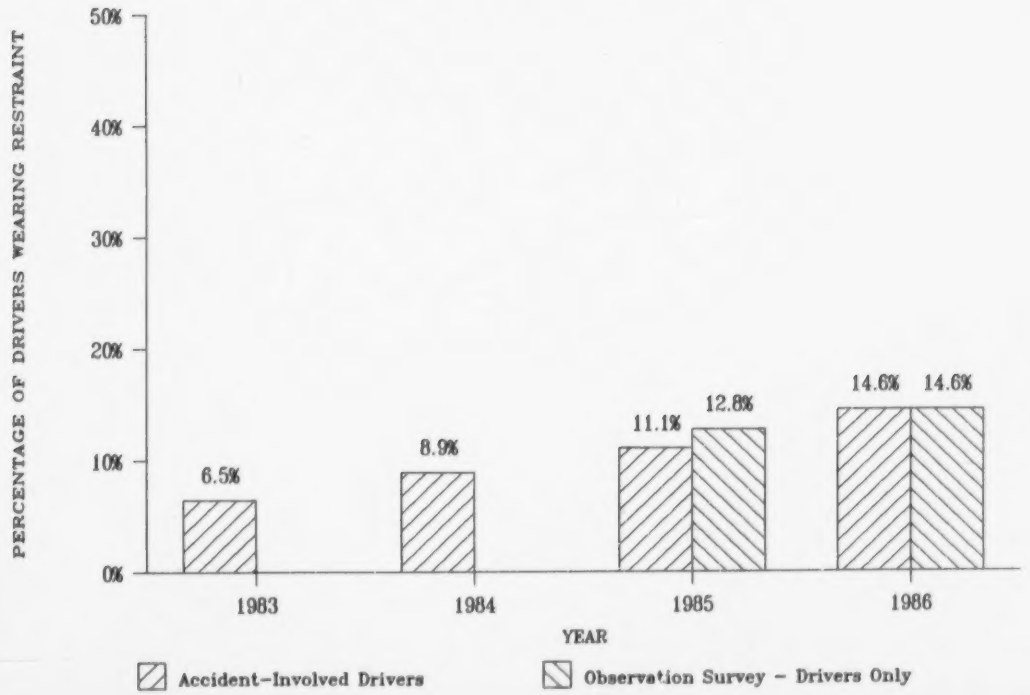


FIGURE 2-10 RESTRAINT USE

FOR DRIVERS BY YEAR



Cycle and Pedestrian Accidents

The following tables provide a yearly comparison of South Dakota's motorcycle, pedestrian, and bicycle accidents injuries and fatalities from 1970 through 1986. Moped accidents are included with motorcycle accidents. There have been no fatal moped accidents recorded in South Dakota and the number of injuries is small. See pages 49 - 54 for additional motorcycle, pedestrian, and bicycle accident information.

TABLE 2-8
MOTORCYCLE ACCIDENTS
1970 - 1986

Year	Motorcycle Accidents Total	Fatal	Injury	Motorcyclists Fatalities	Injuries	Registered Motorcycles	Licensed Motorcyclists
1970	217	8		8	211	11,964	
1971	336	11		13	342	13,865	
1972	314	6		8	312	16,605	
1973	395	13		14	425	19,737	
1974	344	8		9	372	22,964	
1975	377	14	321	14	388	23,980	
1976	465	9	402	9	501	25,058	
1977	495	17	419	19	529	26,560	
1978	523	14	456	14	560	27,590	34,225
1979	597	21	522	22	664	31,102	37,286
1980	707	17	608	18	763	35,045	41,431
1981	697	15	598	15	729	38,265	43,170
1982	548	12	473	13	581	38,418	Not Available
1983	573	12	489	12	591	39,255	45,544
1984	564	10	488	10	567	38,956	45,763
1985	551	14	469	15	569	37,905	45,805
1986	475	10	405	10	492	36,036	45,210

Source: Department of Transportation: Accident Records

TABLE 2-9
PEDESTRIAN FATALITIES AND INJURIES
1970 - 1986

Year	Fatalities	Injuries
1970	17	158
1971	15	170
1972	30	199
1973	21	161
1974	25	158
1975	11	179
1976	24	158
1977	21	164
1978	15	185
1979	16	167
1980	21	162
1981	20	130
1982	16	146
1983	20	139
1984	14	139
1985	8	136
1986	15	165

Source: Department of Transportation: Accident Records

TABLE 2-10
BICYCLE FATALITIES AND INJURIES
1970 - 1986

Year	Fatalities	Injuries
1970	3	67
1971	4	90
1972	2	94
1973	4	82
1974	2	115
1975	1	108
1976	3	99
1977	7	89
1978	3	82
1979	4	96
1980	0	78
1981	0	83
1982	1	93
1983	1	99
1984	4	95
1985	3	119
1986	1	115

Source: Department of Transportation: Accident Records

Holiday Counts

TABLE 2-11 provides a yearly comparison of South Dakota motor vehicle accident experience during major holiday observances. These counts are frequently requested and reported.

TABLE 2-11
ACCIDENTS DURING HOLIDAYS
1975 - 1986

Holiday	Total Hours	Total Accd.	Fatal Accd.	Injury Accd.	Fatalities	Injuries
MEMORIAL DAY*						
1975	78	125	2	39	3	78
1976	78	135	1	47	1	74
1977	78	147	1	46	1	75
1978	78	146	1	54	1	84
1979	78	144	3	60	3	91
1980	78	128	5	46	12	71
1981	78	129	3	48	3	65
1982	78	129	2	45	2	75
1983	78	119	4	43	4	77
1984	78	110	0	36	0	54
1985	78	124	3	44	3	65
1986	78	142	3	37	3	56
FOURTH OF JULY						
1975	78	136	5	62	6	108
1976	78	175	3	51	3	79
1977	78	169	5	70	6	115
1978	102	241	2	108	3	171
1979	30	60	0	27	0	40
1980	78	166	3	56	3	86
1981	78	174	2	63	2	97
1982	78	160	1	64	1	106
1983	78	136	1	46	1	82
1984	30	61	1	22	1	33
1985	102	170	1	58	1	93
1986	78	109	4	47	4	94
LABOR DAY						
1975	78	126	3	47	3	80
1976	78	181	4	68	4	93
1977	78	179	3	70	3	108
1978	78	150	2	66	2	112
1979	78	140	1	55	1	83
1980	78	108	2	35	2	65
1981	78	149	2	68	2	105
1982	78	134	1	62	1	100
1983	78	132	5	48	6	71
1984	78	111	3	42	3	64
1985	78	127	3	40	3	63
1986	78	106	1	34	1	62

*Nationally Observed

Holiday	Total Hours	Total Accd.	Fatal Accd.	Injury Accd.	Fatalities	Injuries
THANKSGIVING						
1975	102	179	0	39	0	57
1976	102	228	2	56	2	96
1977	102	278	0	66	0	95
1978	102	316	2	76	2	122
1979	102	223	3	48	3	67
1980	102	192	3	63	8	94
1981	102	197	0	39	0	54
1982	102	184	2	47	2	67
1983	102	210	2	44	3	71
1984	102	194	2	56	2	83
1985	102	272	0	51	0	76
1986	102	162	3	37	3	63
CHRISTMAS						
1975	102	184	1	41	1	62
1976	78	116	5	37	10	71
1977	78	206	1	58	4	89
1978	78	149	1	40	1	66
1979	102	162	4	53	4	80
1980	102	222	3	58	3	92
1981	78	103	3	21	3	42
1982	78	198	1	42	1	72
1983	78	155	0	30	0	47
1984	102	195	0	35	0	52
1985	54	97	1	13	2	25
1986	102	88	1	28	1	51
NEW YEARS						
1975-76	102	197	2	42	2	61
1976-77	78	197	2	43	2	56
1977-78	78	254	4	61	4	94
1978-79	78	139	1	34	1	44
1979-80	102	204	3	62	5	91
1980-81	102	169	1	58	1	106
1981-82	78	147	1	32	1	42
1982-83	78	137	2	29	2	39
1983-84	78	166	0	41	0	59
1984-85	102	132	2	24	2	39
1985-86	54	98	1	19	1	27
1986-87	102	138	1	30	1	49

Source: Department of Transportation: Accident Records

III. 1986 MOTOR VEHICLE ACCIDENT PROFILE

Introduction

This section profiles the reported motor vehicle traffic accidents for 1986. Information will be given on where the accidents are occurring, when accidents happen, who is involved, and factors that contribute to accidents or why they are occurring. Column percentages may not total 100 percent due to rounding error.

During 1986, there were 13,714 reported motor vehicle traffic accidents, the majority of accidents being property damage only 9,491 (69%). Injury accidents accounted for 4,105 (30%) of the accidents, while 118 (1%) were fatal accidents. There were 6,008 persons injured and 134 persons killed in accidents during 1986 (see TABLE 3-1).

TABLE 3-1
FATALITIES AND SEVERITY OF INJURIES OF DRIVERS,
PASSENGERS, PEDESTRIANS, AND BICYCLISTS
1986

	Incapac. Injuries		Nonincapac. Injuries		Possible Injuries		Total Nonfatal Injuries		Total Fatalities	
	No.	%	No.	%	No.	%	No.	%	No.	%
Drivers	720	58.3	1,598	62.3	1,513	68.4	3,831	63.8	70	52.2
Passengers	407	33.0	842	32.9	650	29.4	1,899	31.6	48	35.8
Pedestrians	75	6.1	64	2.5	26	1.2	165	2.7	15	11.2
Bicycle Dr.	32	2.6	59	2.3	22	1.0	113	1.9	1	0.7
Total	1,234	100	2,563	100	2,211	100	6,008	100	134	100

Note: Incapacitating - severe lacerations, broken limbs or unable to leave the scene of the accident without assistance.

Nonincapacitating - minor lacerations, lumps on the head, abrasions and bruises.

Possible - momentary unconsciousness, limping, nausea, or complaint of pain.

Source: Department of Transportation: Accident Records

TABLE 3-2 provides information on persons killed and injured by method or mode of transportation. During 1986, one-half of the fatalities and nearly two-thirds of the injuries occurred to occupants of passenger cars. Occupants of pickups and vans accounted for one-fifth of the fatalities and injuries. Additionally in 1986, fifteen pedestrians, ten motorcyclists, one bicyclist, one snowmobile rider, and one motor home occupant were killed (see FIGURES 3-1 and 3-2).

TABLE 3-2
FATALITIES AND INJURIES BY MODE OF TRANSPORTATION
1986

	Fatalities		Injuries	
	No.	%	No.	%
Passenger Cars	67	50.0	3,765	62.7
Pickups, Vans	29	21.6	1,245	20.7
Pedestrians	15	11.2	165	2.7
Motorcycle, Moped	10	7.5	492	8.2
Trucks (All)	10	7.5	178	3.0
Other	2	1.5	41	0.7
Bicycle	1	0.7	115	1.9
Farm Machinery	0	0.0	7	0.1
Total	134	100	6,008	100

Note: Other includes Bus, Motor Home, Heavy Equipment, Other Type Motor Vehicles, and Snowmobiles.

Source: Department of Transportation: Accident Records

FIGURE 3-1 FATALITIES BY TRAVEL MODE

1986

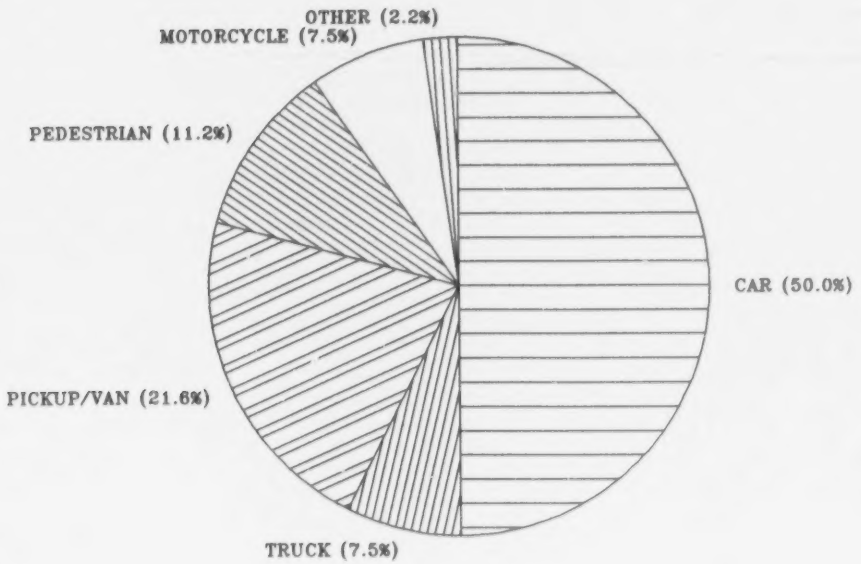


FIGURE 3-2 INJURIES BY TRAVEL MODE

1986

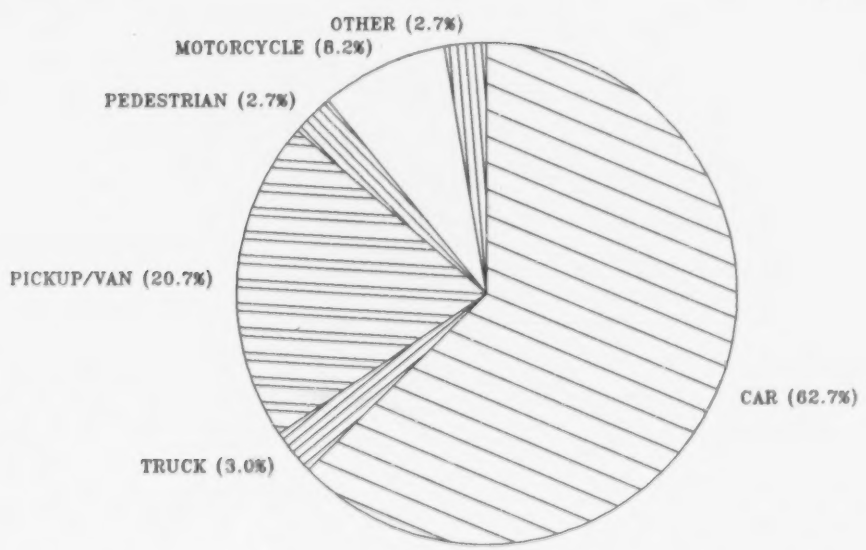


TABLE 3-3 provides information on all accident-involved vehicles by type. Trucks were involved in 27 or 16.5 percent of the vehicles involved in fatal accidents, but truck occupants (see TABLE 3-2 Mode of Transportation) make up 7.5 percent or ten of the persons killed. Passenger cars made up one-half of the vehicles involved in fatal accidents and nearly two-thirds of those involved in injury accidents.

TABLE 3-3
VEHICLE TYPES INVOLVED IN ACCIDENTS
1986

	All Accidents		Fatal Accidents		Injury Accidents		PDO Accidents	
	No.	%	No.	%	No.	%	No.	%
Passenger Cars	15,165	66.8	82	50.0	4,326	65.0	10,757	67.7
Pickups, Vans	5,795	25.5	38	23.2	1,540	23.1	4,217	26.5
Trucks	964	4.2	27	16.5	289	4.3	648	4.1
Motorcycle	478	2.1	12	7.3	412	6.2	54	0.3
Farm Machinery or Heavy Equipment	88	0.4	1	0.6	35	0.5	52	0.3
Bus	49	0.2	1	0.6	16	0.2	32	0.2
Motor Home	34	0.1	1	0.6	7	0.1	26	0.2
Moped	11	0.0	0	0.0	10	0.2	1	0.0
Snowmobile	5	0.0	1	0.6	2	0.0	2	0.0
Other or Unknown	125	0.6	1	0.6	17	0.3	107	0.7
Total	22,714	100	164	100	6,654	100	15,896	100

Source: Department of Transportation: Accident Records

TABLE 3-4 provides information on the ages of persons killed and injured. Half of the persons killed were under 30, with more 23 year olds killed than any other single age. The average age of those killed was 34.4. See the DRIVERS Section beginning on Page 42 for additional information.

TABLE 3-4
FATALITIES AND INJURIES
BY AGE GROUP
1986

	Fatalities		Injuries	
	No.	%	No.	%
0 - 5	8	6.0	195	3.2
6 - 13	7	5.2	338	5.6
14 - 15	2	1.5	312	5.2
16 - 18	13	9.7	834	13.9
19 - 20	6	4.5	486	8.1
21 - 24	20	14.9	781	13.0
25 - 34	27	20.1	1,177	19.6
35 - 44	14	10.4	613	10.2
45 - 54	10	7.5	381	6.3
55 - 64	7	5.2	357	5.9
65 & Over	20	14.9	440	7.3
Unknown	0	0	94	1.6
Total	134	100	6,008	100

Source: Department of Transportation: Accident Records

First Harmful Event

The initial incident which causes injury or damage is referred to as the first harmful event. A motor vehicle collision with an object such as another motor vehicle (parked and not parked), a fixed or other object, a pedestrian, an animal, a bicycle, or a railroad vehicle accounted for nearly 88 percent of the first harmful events. The other 12.3 percent are motor vehicles overturning or other noncollision incidents, such as a person falling out of a motor vehicle (see TABLE 3-5).

TABLE 3-5
FIRST HARMFUL EVENT
1986

First Harmful Event	Total Accidents No.	%	Fatal Accidents No.	%	Injury Accidents No.	%	PDO Accidents No.	%
Motor Vehicle Collision With:								
Another MV (Not Parked)	7,322	53.4	42	35.6	2,125	51.8	5,155	54.3
A Fixed or Other Object	2,085	15.2	24	20.3	773	18.8	1,288	13.6
An Animal	1,347	9.8	2	1.7	61	1.5	1,284	13.5
A Parked Motor Vehicle	990	7.2	0	0.0	120	2.9	870	9.2
A Pedestrian	163	1.2	15	12.7	148	3.6	0	0.0
A Bicyclist	111	0.8	1	0.8	110	2.7	0	0.0
A Railroad Vehicle	12	0.1	0	0.0	3	0.1	9	0.1
Non-Collision (Overturning or Other)	1,684	12.3	34	28.8	765	18.6	885	9.3
Total	13,714	100	118	100	4,105	100	9,491	100

Source: Department of Transportation: Accident Records

Manner of Collision

The most common type or manner of collision between two or more vehicles is an angle collision which usually occur at an intersection. Angle collisions constitute 50.0 percent of the fatal collisions, 37.6 percent of the injury collisions, and 34.7 percent of the property damage only collisions. Rear-end collisions are second in prevalence accounting for 30.6 percent of the injury collisions and 22.2 percent of the property damage collisions. Head-on collisions are over-represented in fatal accidents where they account for 26.2 percent of the collisions as compared to only 2.6 percent of the total collisions (see TABLE 3-6).

TABLE 3-6
MANNER OF COLLISION FOR ACCIDENTS INVOLVING A COLLISION BETWEEN TWO OR MORE MOTOR VEHICLES
1986

Manner of Collision	Total Accidents		Fatal Accidents		Injury Accidents		PDO Accidents	
	No.	%	No.	%	No.	%	No.	%
Rear-End	1,799	24.6	4	9.5	650	30.6	1,145	22.2
Head-On	192	2.6	11	26.2	94	4.4	87	1.7
Angle	2,608	35.6	21	50.0	798	37.6	1,789	34.7
Sideswipe-Same Direction	641	8.8	0	0.0	102	4.8	539	10.5
Sideswipe-Opposite Dir.	279	3.8	4	9.5	74	3.5	201	3.9
Turning Movement	1,374	18.8	2	4.8	379	17.8	993	19.3
Backing Movement	427	5.8	0	0.0	28	1.3	399	7.7
Total	7,320	100	42	100	2,125	100	5,153	100

Source: Department of Transportation: Accident Records

Highway System

The number of reported accidents by highway system is presented in TABLE 3-7. Injury and PDO accidents happened predominately within city limits. City streets and alleys experienced 39 percent of the PDO accidents and one-third of the injury accidents. Approximately one in five of the injury and PDO accidents occurred on U.S. and State highway routes within city limits.

Eighty percent of the fatal accidents occurred on noninterstate rural highways with fifty-five (55) fatal accidents on U.S./State highways and forty (40) on County/Local roads. Across all categories, the Interstate system experiences less than eight percent of the accidents while accounting for nearly 18 percent of the vehicle miles traveled in 1986 (see FIGURES 3-3 and 3-4).

TABLE 3-7
ACCIDENTS BY TYPE OF HIGHWAY
1986

Type of Highway	Total Accidents Number	%	Fatal Accidents Number	%	Injury Accidents Number	%	PDO Accidents Number	%
Interstate	1,087	7.9	5	4.2	295	7.2	787	8.3
US/State Hwys.-Rural	2,358	17.2	55	46.6	720	17.5	1,583	16.7
Co./Local Rds.-Rural	2,327	17.0	40	33.9	770	18.8	1,517	16.0
US/State Hwys.-City	2,865	20.9	6	5.1	949	23.1	1,910	20.1
City Streets/Alleys	5,077	37.0	12	10.2	1,371	33.4	3,694	38.9
Total	13,714	100	118	100	4,105	100	9,491	100

Source: Department of Transportation: Accident Records

FIGURE 3-3 1986 TRAFFIC ACCIDENTS

BY HIGHWAY SYSTEM TYPE

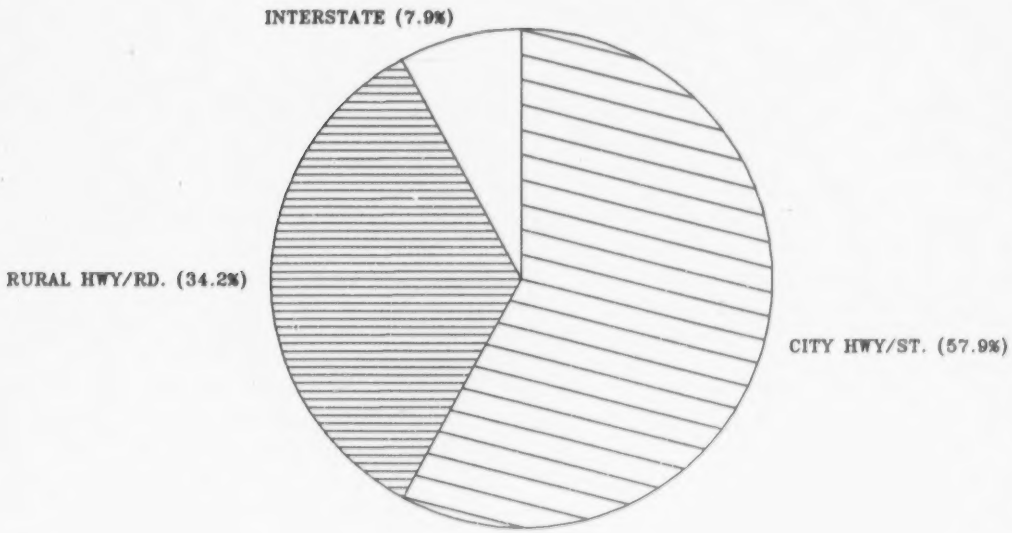
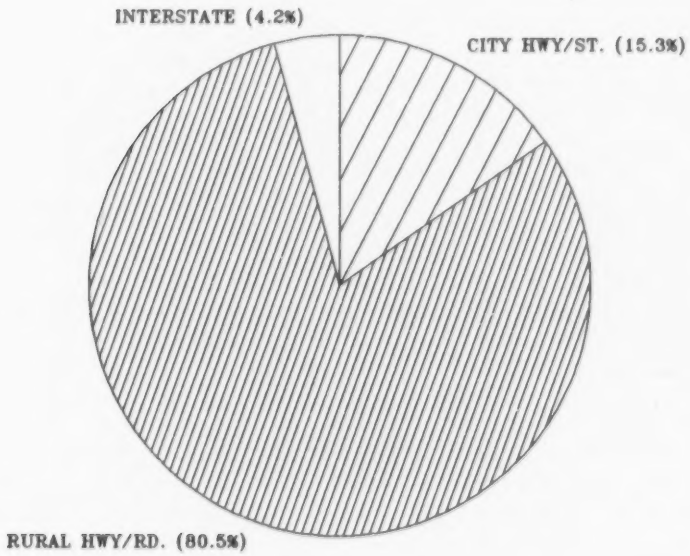


FIGURE 3-4 1986 FATAL TRAFFIC ACCIDENTS

By Highway System Type



County Summary

TABLE 3-8 provides a summary of all reported accidents by county in South Dakota.

Rural fatal and injury accidents occurred predominately in twelve counties (see TABLE 3-9). Each of these counties reported at least two percent of all rural fatal and injury accidents. The twelve accounted for 51.8 percent of rural fatal and injury accidents and 22.3 percent of all fatal and injury accidents in South Dakota. Pennington County had 12.2 percent of all rural fatal and injury accident with Minnehaha and Lawrence counties accounting for 7.1 and 6.2 percent, respectively. FIGURE 3-5 presents the percentage involvement of rural fatal and injury accidents and compares this to the percentage of rural vehicle miles traveled in these counties. The most current figures available for rural VMTs by county are from 1983.

City Summary

Reported traffic accidents within South Dakota's cities (population of 2,500 and more) are presented in TABLE 3-10. These cities reported over half of the property damage only and injury accidents and nearly 13 percent of the fatal accidents. The three largest cities - Sioux Falls, Rapid City, and Aberdeen - accounted for two-thirds of fatal and injury accidents and over 60 percent of the property damage only accidents that occurred in cities with populations of 2,500 or more.

Roadway Surface Conditions

The majority of the accidents occurred on dry roads, including fatal and injury accidents (see TABLE 3-11). Combining similar "bad" road conditions, ice, snow, frost, and slush accounts for less than one-forth (24.1%) of all reported property damage accidents and 15.3 percent of all fatal and injury accidents. Over 70 percent of all fatal and injury accidents occurred on dry roads.

Contributing Circumstances (Vision Obscurement and Other)

Contributing circumstances at the accident level involve two categories: vision obscurement and other. The reporting officer may include one, two, or no contributing circumstances for each category. Vision obscurement refers to conditions such as: fog or smoke, blowing soil, dirt or sand, rain, snow, sleet or hail, windshield or window obscured, glare from sun or lights, trees or other vegetation, snowbank, etc. Vision obscurement as a contributing circumstance was indicated in 23.4 percent of all accidents with two separate vision obscurements being reported in less than three percent of all accidents. Rain, snow, sleet or hail was the most frequently reported vision obscurement and was indicated as a problem in 6.9 percent of all accidents.

Contributing Circumstances - Other - was reported in 31.5 percent of all accidents with two being reported in 3.5 percent of all accidents. These contributing circumstances include wind conditions, slippery surface, road shoulder conditions, objects or animals in the road, phantom vehicle, pedestrians, bicyclists, road construction conditions, rough roads, and faulty or missing traffic control devices. The most common condition reported was slippery surface, and it was reported as a factor in 20.0 percent of all accidents.

TABLE 3-8
REPORTED TRAFFIC ACCIDENTS
SOUTH DAKOTA COUNTIES
1986

County	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
AURORA	60	2	19	39	2	24
BEADLE	407	1	138	268	1	187
BENNETT	24	1	5	18	1	19
BON HOMME	71	1	25	45	1	37
BROOKINGS	438	2	99	337	2	137
BROWN	851	2	292	557	2	419
BRULE	145	2	19	124	2	29
BUFFALO	8	0	2	6	0	3
BUTTE	135	4	42	89	5	73
CAMPBELL	22	0	3	19	0	10
CHARLES MIX	89	2	31	56	2	49
CLARK	64	0	5	59	0	10
CLAY	155	1	41	113	1	56
CODINGTON	435	1	134	300	1	192
CORSON	49	3	19	27	4	37
CUSTER	184	1	75	108	2	95
DAVISON	565	2	179	384	2	260
DAY	135	0	29	106	0	42
DEUEL	85	3	19	63	3	43
DEWEY	39	1	12	26	1	21
DOUGLAS	15	0	9	6	0	18
EDMUNDS	65	0	19	46	0	22
FALL RIVER	147	3	45	99	3	69
FAULK	55	0	8	47	0	12
GRANT	90	2	23	65	2	37
GREGORY	81	0	25	56	0	40
HAAKON	59	0	12	47	0	25
HAMLIN	87	2	18	67	2	24
HAND	91	1	26	64	1	35
HANSON	70	0	12	58	0	16
HARDING	34	1	9	24	1	15
HUGHES	387	2	96	289	2	138
HUTCHINSON	101	2	14	85	3	18
HYDE	28	0	7	21	0	10
JACKSON	85	3	25	57	3	32
JERAULD	39	1	7	31	1	12
JONES	68	0	19	49	0	31
KINGSBURY	107	1	21	85	1	23
LAKE	161	1	40	120	1	64
LAWRENCE	450	7	136	307	7	210
LINCOLN	300	1	94	205	1	157
LYMAN	110	2	33	75	2	48

TABLE 3-8 (Continued)

County	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
MC COOK	136	0	33	103	0	43
MC PHERSON	17	1	2	14	1	2
MARSHALL	91	1	14	76	2	23
MEADE	221	5	72	144	6	119
MELLETTE	25	0	13	12	0	18
MINER	54	1	12	41	1	17
MINNEHAHA	2,768	10	859	1,899	11	1,212
MOODY	145	3	44	98	3	68
PENNINGTON	2,246	15	743	1,488	22	1,063
PERKINS	59	1	16	42	1	19
POTTER	48	0	10	38	0	14
ROBERTS	112	2	50	60	3	84
SANBORN	55	2	12	41	2	20
SHANNON	5	4	0	1	4	7
SPINK	131	1	27	103	1	39
STANLEY	64	0	16	48	0	22
SULLY	49	1	11	37	1	17
TODD	58	5	25	28	6	51
TRIPP	130	2	33	95	2	42
TURNER	103	0	30	73	0	43
UNION	150	1	58	91	1	87
WALWORTH	93	1	20	72	1	27
YANKTON	349	3	114	232	3	165
ZIEBACH	14	1	5	8	1	7
Total	13,714	118	4,105	9,491	134	6,008

Source: Department of Transportation: Accident Records

TABLE 3-9
COUNTIES HAVING MORE THAN TWO PERCENT OF THE
RURAL FATAL & INJURY ACCIDENTS
1986

County	Number of Rural Fatal & Injury Accd.	Percent of All Rural Fatal & Injury Accd.
BROOKINGS	36	2.0
BROWN	72	4.0
CODINGTON	36	2.0
CUSTER	63	3.5
LAWRENCE	112	6.2
LINCOLN	72	4.0
MEADE	60	3.3
MINNEHAHA	130	7.1
PENNINGTON	222	12.2
ROBERTS	42	2.3
UNION	50	2.7
YANKTON	45	2.5
Total	940	51.8

Source: Department of Transportation: Accident Records

FIGURE 3-5 RURAL F&I ACC/VMTs

SELECTED COUNTIES

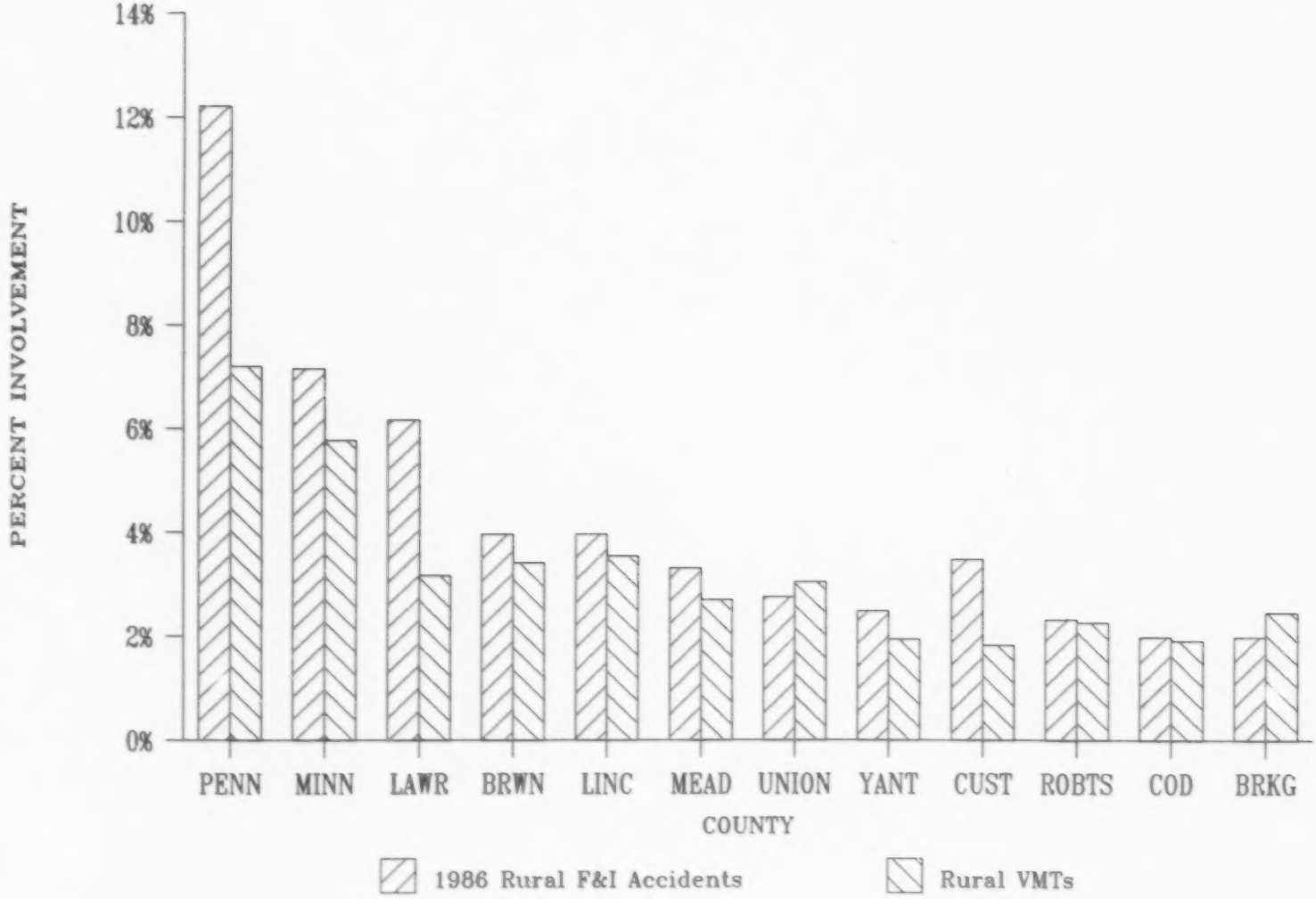


TABLE 3-10
TRAFFIC ACCIDENTS SOUTH DAKOTA CITIES
POPULATION 2500 AND OVER
1986

City	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
Aberdeen	597	0	217	380	0	296
Belle Fourche	54	2	13	39	3	17
Box Elder	39	0	7	32	0	7
Brandon City	15	0	8	7	0	12
Brookings	249	0	65	184	0	89
Canton	54	0	17	37	0	25
Hot Springs	62	0	14	48	0	20
Huron	286	1	100	185	1	128
Lead	54	0	7	47	0	8
Madison	77	0	20	57	0	26
Milbank	25	0	6	19	0	8
Mitchell	483	0	152	331	0	204
Mobridge	36	0	5	31	0	5
Pierre	321	0	76	245	0	108
Rapid City	1,522	5	521	996	5	742
Redfield	17	0	5	12	0	6
Sioux Falls	2,331	5	717	1,609	5	1,001
Sisseton	17	0	8	9	0	9
Spearfish	69	0	13	56	0	18
Sturgis	82	1	16	65	1	25
Vermillion	69	0	16	53	0	21
Watertown	323	0	99	224	0	144
Winner	66	1	8	57	1	11
Yankton	213	0	71	142	0	100

Source: Department of Transportation: Accident Records

TABLE 3-11
ROADWAY SURFACE CONDITIONS
1986

	Total Accidents		Fatal Accidents		Injury Accidents		PDO Accidents	
	No.	%	No.	%	No.	%	No.	%
Dry	8,914	65.0	95	80.5	2,910	70.9	5,909	62.3
Wet	1,731	12.6	11	9.3	515	12.5	1,205	12.7
Ice	1,860	13.6	7	5.9	420	10.2	1,433	15.1
Frost	226	1.6	1	0.8	63	1.5	162	1.7
Slush	187	1.4	1	0.8	38	0.9	148	1.6
Snow	657	4.8	1	0.8	116	2.8	540	5.7
Mud	25	0.2	1	0.8	11	0.3	13	0.1
Other	50	0.4	1	0.8	20	0.5	29	0.3
Unknown	64	0.5	0	0.0	12	0.3	52	0.5
Total	13,714	100	118	100	4,105	100	9,491	100

Source: Department of Transportation: Accident Records

Accidents by Time of Day, Month, and Day of Week

The late afternoon, 3:00-6:00 p.m., was the peak three-hour period for accidents to occur. Twenty-three percent of property damage only and injury accidents occurred during this time period. The one-hour period, 1:00-2:00 a.m., had the most fatal accidents (9), but the most fatalities (15) occurred between 9:00-10:00 p.m. (see TABLE 3-12).

The summer months had the most fatal and injury accidents during 1986, while the winter months had more PDO accidents. Nearly one-quarter of the fatal accidents and 21 percent of the injury accidents occurred in July and August. There is more vacation and other recreational travel during these months. Twenty-three percent of the PDO accidents occurred in January and November. The road conditions in the winter months contribute to the increase in PDO accidents (see TABLE 3-13).

Friday and Saturday account for 33.3 percent of the injury accidents, while Saturday and Sunday account for nearly 40 percent of the fatal accidents (see TABLE 3-14).

FIGURES 3-6 through 3-8 illustrate the trends of time of day, month, and day of week.

TABLE 3-12
ACCIDENTS BY TIME OF DAY
1986

Time	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
MIDNIGHT	359	6	127	226	6	190
1:00 AM	387	9	129	249	9	197
2:00 AM	316	4	121	191	4	169
3:00 AM	159	3	62	94	3	83
4:00 AM	111	3	34	74	3	52
5:00 AM	178	1	59	118	1	88
6:00 AM	278	0	75	203	0	91
7:00 AM	575	2	148	425	3	219
8:00 AM	623	3	185	435	3	267
9:00 AM	512	3	143	366	3	202
10:00 AM	564	2	153	409	2	230
11:00 AM	654	6	192	456	6	293
12:00 PM	705	3	215	487	4	292
1:00 PM	783	7	238	538	7	361
2:00 PM	787	1	263	523	1	369
3:00 PM	1,147	7	321	819	8	476
4:00 PM	1,058	8	325	725	9	473
5:00 PM	976	8	314	654	9	464
6:00 PM	755	5	209	541	5	321
7:00 PM	617	4	173	440	4	260
8:00 PM	508	7	146	355	8	228
9:00 PM	568	8	173	387	15	261
10:00 PM	550	8	151	391	11	212
11:00 PM	445	8	130	307	8	187
UNKNOWN	99	2	19	78	2	23
TOTAL	13,714	118	4,105	9,491	134	6,008

Source: Department of Transportation: Accident Records

TABLE 3-13
ACCIDENTS BY MONTH
1986

Month	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
JANUARY	1,456	7	335	1,114	9	490
FEBRUARY	1,105	5	257	843	6	352
MARCH	1,054	5	302	747	5	402
APRIL	972	7	269	696	7	412
MAY	1,107	10	342	755	10	506
JUNE	1,169	9	399	761	16	605
JULY	1,078	14	430	634	14	657
AUGUST	1,144	14	431	699	14	651
SEPTEMBER	1,077	12	378	687	16	530
OCTOBER	1,186	14	355	817	15	511
NOVEMBER	1,426	12	343	1,071	13	497
DECEMBER	940	9	264	667	9	395
TOTAL	13,714	118	4,105	9,491	134	6,008

Source: Department of Transportation: Accident Records

TABLE 3-14
ACCIDENTS BY DAY OF WEEK
1986

Day	Total Accd.	Fatal Accd.	Injury Accd.	PDO Accd.	Fatalities	Injuries
SUNDAY	1,695	18	532	1,145	19	858
MONDAY	1,766	12	476	1,278	13	664
TUESDAY	1,999	11	568	1,420	14	779
WEDNESDAY	1,858	17	557	1,284	18	798
THURSDAY	1,918	17	605	1,296	17	854
FRIDAY	2,304	14	667	1,623	23	975
SATURDAY	2,174	29	700	1,445	30	1,080
TOTAL	13,714	118	4,105	9,491	134	6,008

Source: Department of Transportation: Accident Records

FIGURE 3-6 ACCIDENTS BY TIME OF DAY

1986

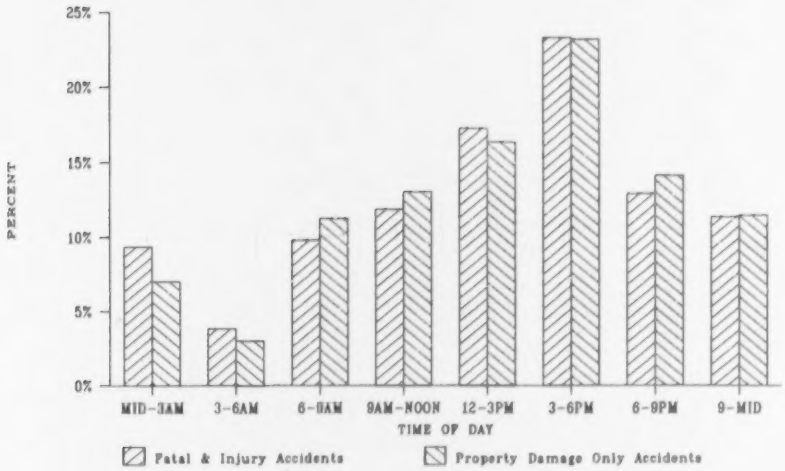


FIGURE 3-7 ACCIDENTS BY MONTH

1986

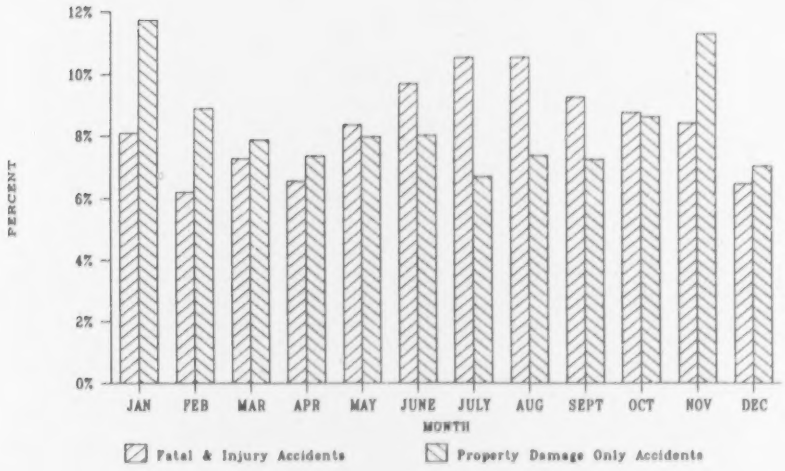
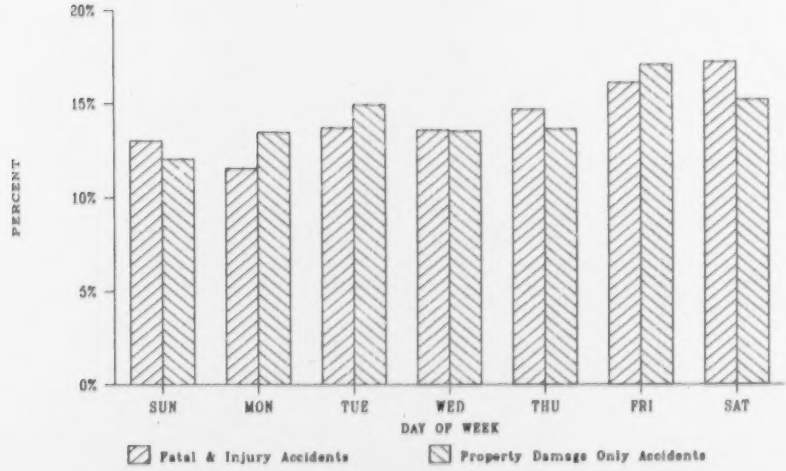


FIGURE 3-8 ACCIDENTS BY DAY OF WEEK

1986



Drivers

There were 21,373 motor vehicle drivers in the 13,714 reported motor vehicle accidents, including 164 drivers in fatal accidents and 6,438 drivers in injury accidents. Seventy drivers were killed, which is 52.2 percent of all persons killed in motor vehicle accidents while 63.8 percent or 3,831 of the 6,008 injured were drivers.

Young drivers are involved in more accidents than any other age group (see TABLE 3-15). Thirty-nine percent of the drivers in reported accidents are under 25 years of age and 62.2 percent are under 35. Age of drivers involved in fatal and injury accidents follow the pattern of drivers in all accidents. Those drivers under 25 represent 26.7 percent of the drivers involved in fatal accidents and 40.6 percent of the drivers in injury accidents. Drivers under the age of 35 make up 54.7 percent of the drivers in fatal accidents and 64.7 percent of the drivers in injury accidents.

TABLE 3-15
AGE OF DRIVERS IN ACCIDENTS
1986

Age	Drivers In All Accidents No.	%	Drivers In Fatal Accidents No.	%	Drivers In Injury Accidents No.	%	Drivers In PDO Accidents No.	%
6-13	28	0.1	0	0.0	13	0.2	15	0.1
14-15	695	3.3	5	3.0	221	3.4	469	3.2
16-18	2,989	14.0	15	9.1	923	14.3	2,051	13.9
19-20	1,708	8.0	10	6.1	533	8.3	1,165	7.9
21-24	2,976	13.9	14	8.5	928	14.4	2,034	13.8
25-34	4,903	22.9	46	28.0	1,549	24.1	3,308	22.4
35-44	2,872	13.4	27	16.5	820	12.7	2,025	13.7
45-54	1,711	8.0	16	9.8	484	7.5	1,211	8.2
55-64	1,537	7.2	7	4.3	429	6.7	1,101	7.5
65-Over	1,828	8.6	22	13.4	527	8.2	1,279	8.7
Unknown	126	0.6	2	1.2	11	0.2	113	0.8
Total	21,373	100	164	100	6,438	100	14,771	100

Source: Department of Transportation: Accident Records

Drinking drivers are of major concern because of the number of alcohol-involved serious accidents. TABLE 3-16 provides information on the age of drinking drivers in motor vehicle accidents. There were a reported 1,636 drinking drivers in all accidents which is about 7.7 percent of all drivers in accidents. Sixty-three or 38.4 percent of drivers in fatal accidents had been drinking while 12.3 percent of the drivers involved in injury accidents had been drinking. Young drivers are predominantly the drinking drivers in accidents. Those drivers under 25 years of age accounted for over one-third of the drinking drivers in fatal accidents and over one-half of the drinking drivers in all accidents; while those under 35 years of age accounted for nearly two-thirds of the drinking drivers in fatal accidents and over 80 percent of the drinking drivers in all accidents.

TABLE 3-16
AGE OF DRINKING DRIVERS IN ACCIDENTS
1986

Age	Drivers In All Accidents No.	%	Drivers In Fatal Accidents No.	%	Drivers In Injury Accidents No.	%	Drivers In PDO Accidents No.	%
6 -13	0	0.0	0	0.0	0	0.0	0	0.0
14-15	13	0.8	2	3.2	7	0.9	4	0.5
16-18	230	14.1	7	11.1	109	13.7	114	14.6
19-20	230	14.1	5	7.9	114	14.4	111	14.2
21-24	372	22.7	8	12.7	171	21.6	193	24.7
25-34	478	29.2	19	30.2	251	31.7	208	26.7
35-44	178	10.9	12	19.0	85	10.7	81	10.4
45-54	67	4.1	5	7.9	30	3.8	32	4.1
55-64	31	1.9	1	1.6	14	1.8	16	2.1
65-Over	33	2.0	3	4.8	12	1.5	18	2.3
Unknown	4	0.2	1	1.6	0	0.0	3	0.4
Total	1,636	100	63	100	793	100	780	100

Source: Department of Transportation: Accident Records

TABLE 3-17 compares age of drivers in fatal and injury accidents, drinking drivers in fatal and injury accidents, and speeding drivers in fatal and injury accidents with licensed drivers by age. Again the young driver is over-represented as those drivers in fatal and injury accidents, drinking drivers in fatal and injury accidents, and speeding drivers in fatal and injury accidents. Approximately twenty percent of the licensed drivers in South Dakota were under 25, but one-half of the drinking drivers in fatal and injury accidents and 58 percent of the speeding drivers in fatal and injury accidents were under 25 years of age. Eighty-one percent of the drinking drivers and speeding drivers in fatal and injury accidents were under 35 years of age while drivers under 35 years of age constitute 43 percent of all licensed drivers (also see FIGURES 3-9 and 3-10).

TABLE 3-17
LICENSED DRIVERS AND FATAL AND INJURY ACCIDENT-INVOLVED DRIVERS BY AGE
1986

Age	Licensed Drivers %	Drivers in Fatal & Injury Accidents No.	%	Drinking Drivers in Fatal & Injury Accidents No.	%	Speeding Drivers in Fatal&Injury Accidents No.	%
0-13	0.0	13	0.2	0	0.0	4	0.4
14-15	1.5	226	3.4	9	1.1	66	5.8
16-17	3.7	637	9.6	58	6.8	141	12.5
18	1.9	301	4.6	58	6.8	83	7.3
19	1.9	274	4.2	67	7.8	75	6.6
20	2.0	269	4.1	52	6.1	71	6.3
21-24	8.9	942	14.3	179	20.9	216	19.1
25-34	23.1	1,595	24.2	270	31.5	261	23.1
35-44	17.0	847	12.8	97	11.3	113	10.0
45-54	11.8	500	7.6	35	4.1	48	4.2
55-64	12.1	436	6.6	15	1.8	22	1.9
65 & Over	16.1	549	8.3	15	1.8	30	2.7
Unknown		13	0.2	1	0.1	1	0.1
Total	100	6,602	100	856	100	1,131	100

Sources: Department of Transportation: Accident Records
Department of Commerce & Regulation: Driver License Issuance

FIGURE 3-9 DRIVERS BY AGE GROUP 1986

FATAL & INJURY ACCIDENT-INVOLVED DRIVERS

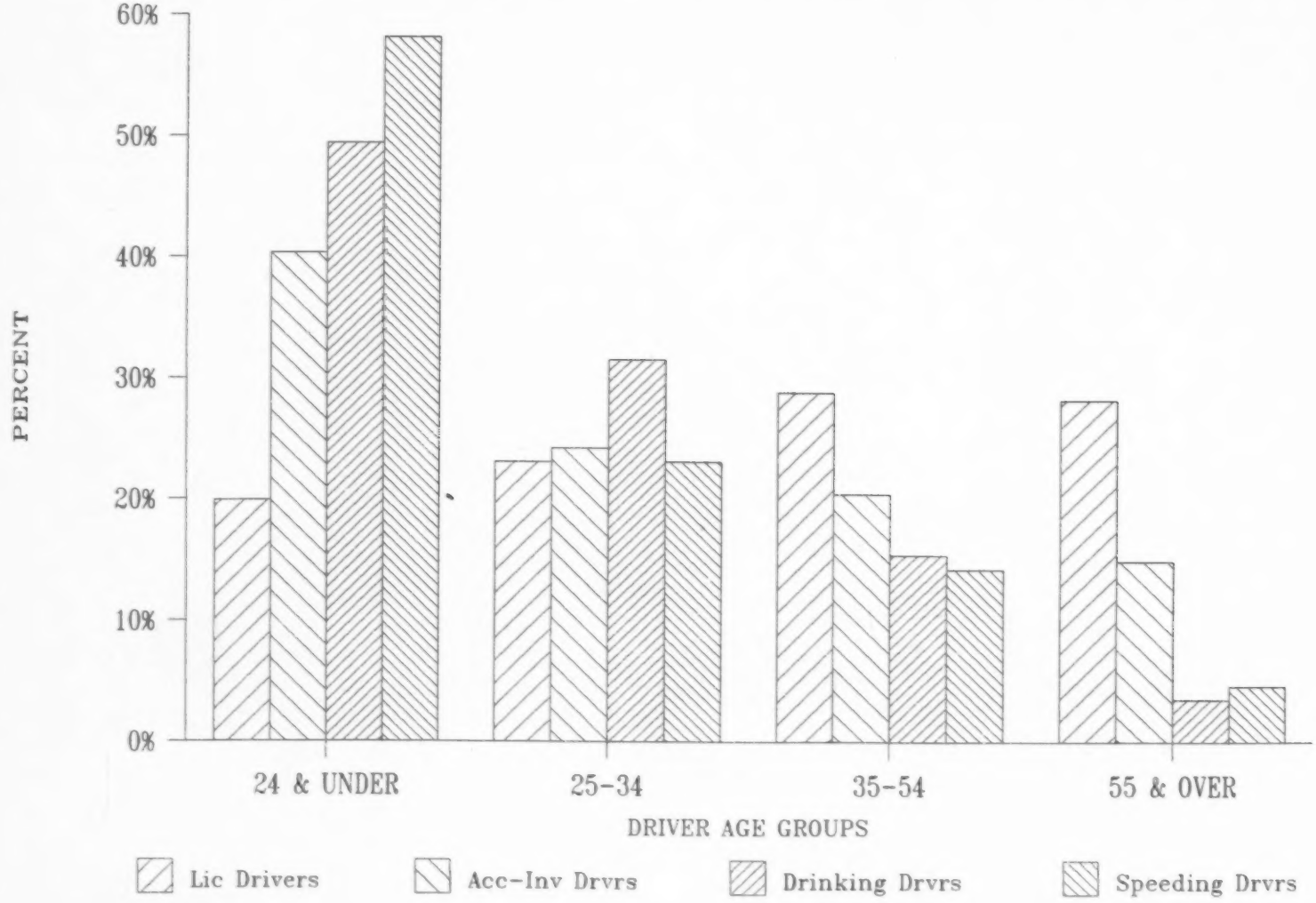
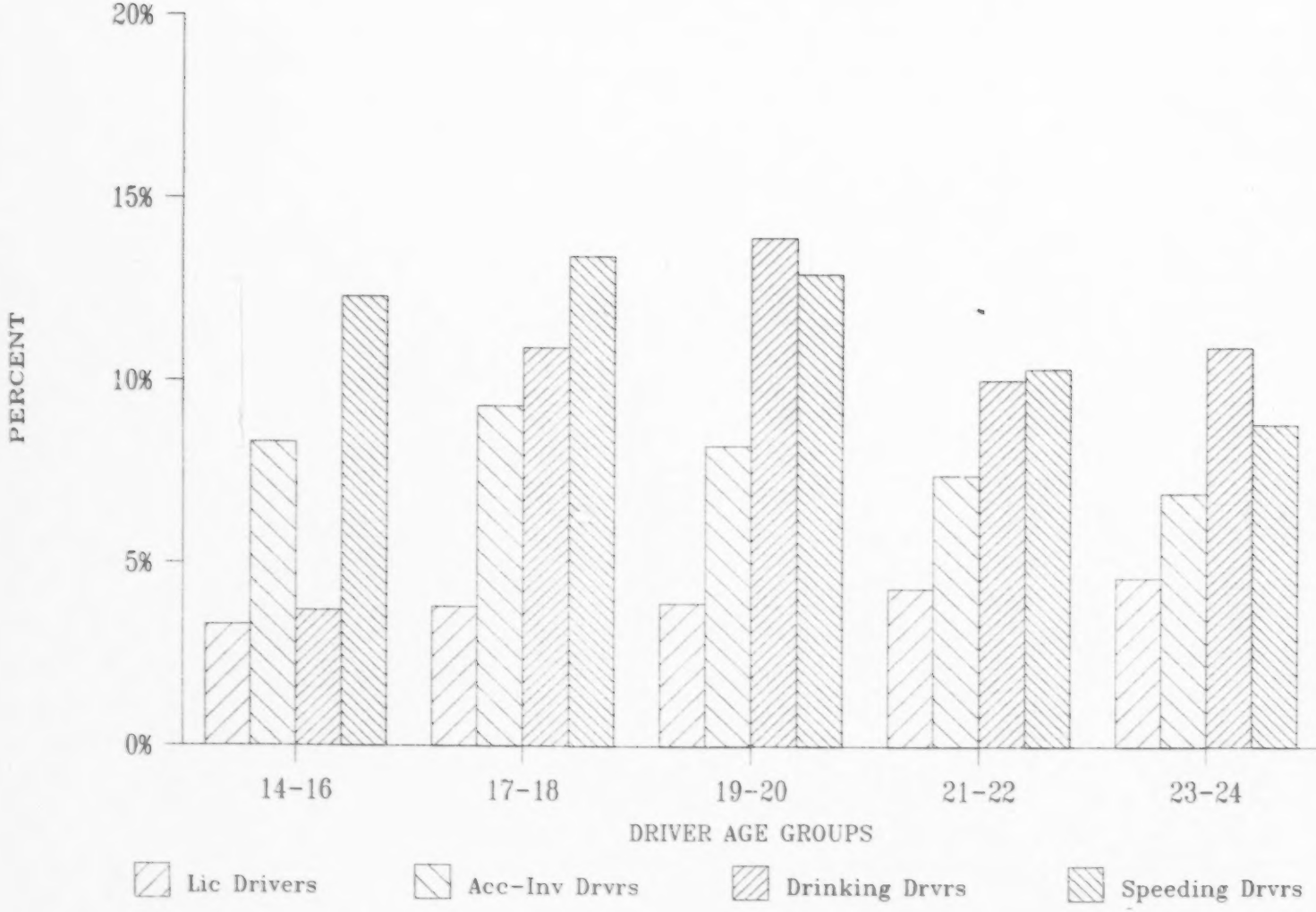


FIGURE 3-10 YOUNG DRIVERS 1986

FATAL & INJURY ACCIDENT-INVOLVED DRIVERS



Driver actions are reported to indicate possible factors that may have contributed to the accidents. These factors are referred to as driver contributing circumstances. Drinking was the leading driver contributing circumstance in fatal accidents during 1986. It was indicated that the drinking of 63 or 38.4 percent of the drivers in fatal accidents contributed to the accident. Exceeding the speed limit and driving on the wrong side of the road were the other leading driver contributing circumstance in fatal accidents. Failing to yield to another vehicle was the leading contributing circumstance in injury accidents. Drinking and exceeding a safe speed but not the legal limit were other leading driver contributing circumstances in injury accidents (see TABLE 3-18).

TABLE 3-18
MOTOR VEHICLE DRIVER CONTRIBUTING CIRCUMSTANCES
1986

	Total Accd. No.	%	Fatal Accd. No.	%	Injury Accd. No.	%	PDO Accd. No.	%
No Contributing Circumstance	10,567	49.4	52	31.7	2,898	45.0	7,617	51.6
Drinking	1,636	7.7	63	38.4	793	12.3	780	5.3
Exceeded Speed Limit	1,122	5.2	42	25.6	507	7.9	573	3.9
Wrong Side of Road	479	2.2	16	9.8	210	3.3	253	1.7
Exceeded Safe Speed But Not Limit	1,816	8.5	11	6.7	571	8.9	1,234	8.4
Failed to Yield to Vehicle	3,073	14.4	14	8.5	917	14.2	2,142	14.5
Failed to Stop for Stop Sign/Flashing Red	369	1.7	8	4.9	176	2.7	185	1.3
Fell Asleep	342	1.6	6	3.7	153	2.4	183	1.2
Improper Passing	286	1.3	0	0.0	94	1.5	192	1.3
Distracted by Obj/ Person in Car	454	2.1	1	0.6	174	2.7	279	1.9
Improper Turn	652	3.1	1	0.6	179	2.8	472	3.2
Following Too Closely	870	4.1	2	1.2	290	4.5	578	3.9
Improper Backing	389	1.8	0	0.0	24	0.4	365	2.5
Other*	2,247	10.5	25	15.2	741	11.5	1,481	10.0
Unknown	588	2.8	10	6.1	165	2.6	413	2.8
Total Drivers	21,373		164		6,438		14,771	

Note: The investigating officer may assign from zero to three contributing circumstances to each driver; therefore, the number of drivers in motor vehicle accidents does not equal the number of contributing circumstances. The number of drivers having drinking as a contributing circumstance is equal to the number of reported drinking drivers in accidents.

*Other includes driving under posted minimum, failed to yield to pedestrian, disregarded stop and go signal, disregarded other traffic control devices, improper signal or failure to signal, turning from wrong lane, improper lane change, improper start from parked position, improper parking, failure to comply with license restrictions, drugs, illness, physical impairment, and illegally in roadway.

Source: Department of Transportation: Accident Records

Motorcycles

Motorcycle accidents constitute 3.5 percent of all accidents, 8.5 percent of all fatal accidents, and 9.9 percent of all injury accidents. There were 10 people killed and 492 injured on motorcycles in the 475 reported motorcycle accidents during 1986. The number of motorcycle accidents have shown a decline in the last few years, while the number of licensed motorcyclists have stabilized at approximately 45,000 (see TABLE 2-10). The young motorcycle driver is over-represented in accidents when compared to their portion of licensed motorcycle operators. Twenty-five percent of all accident-involved riders are less than 20 years of age and nearly 70 percent are under 30 (see TABLE 3-19 and FIGURE 3-11).

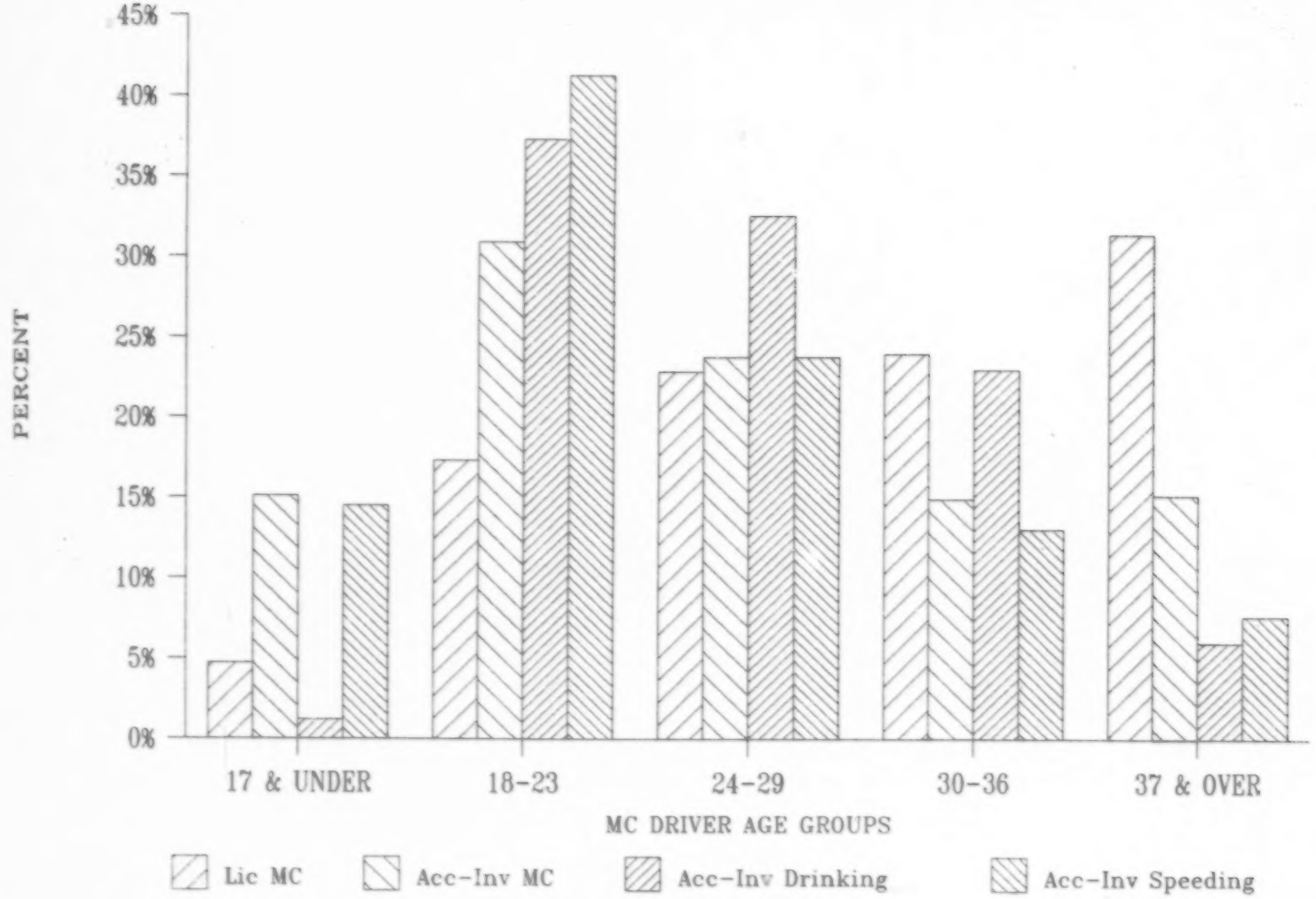
TABLE 3-19
MOTORCYCLISTS BY AGE GROUP
1986

Age Group	Licensed Motorcyclists No.	%	Accident Involved Motorcyclists No.	%	Accident Involved Drinking Motorcyclists No.	%	Accident Involved Speeding Motorcyclists No.	%
0-13	0	0.0	4	0.8	0	0.0	2	1.5
14-15	558	1.2	25	5.2	0	0.0	5	3.8
16-17	1,556	3.4	44	9.1	1	1.2	12	9.2
18-19	2,127	4.7	49	10.2	6	7.1	17	13.0
20-21	2,576	5.7	47	9.8	10	11.9	16	12.2
22-23	3,130	6.9	53	11.0	15	17.9	21	16.0
24-25	3,388	7.5	45	9.3	8	9.5	13	9.9
26-27	3,535	7.8	32	6.6	8	9.5	8	6.1
28-29	3,401	7.5	37	7.7	11	13.1	10	7.6
30-31	3,557	7.9	26	5.4	6	7.1	7	5.3
32-36	7,237	16.0	46	9.5	13	15.5	10	7.6
37-41	4,808	10.6	27	5.6	4	4.8	5	3.8
42-51	5,048	11.2	24	5.0	0	0.0	4	3.1
52-Over	4,289	9.5	22	4.6	2	2.4	1	0.8
Unknown	0	0.0	1	0.2	0	0.0	0	0.0
Total	45,210	100	482	100	84	100	131	100

Sources: Department of Commerce & Regulation: Driver License Issuance
Department of Transportation: Accidents Records

FIGURE 3-11 MOTORCYCLISTS 1986

ACCIDENT-INVOLVED MOTORCYCLE & MOPED DRIVERS



Helmets were used by 127 or 28.3 percent of the motorcycle drivers in accidents while 322 or 71.7 percent did not wear a helmet (see TABLE 3-20). Seven motorcycle drivers and three motorcycle passengers were killed during 1986; only two of the ten were wearing helmets.

TABLE 3-20
HELMET USE BY MOTORCYCLE DRIVERS IN ACCIDENTS
1986

Age	Helmet Used No.	Helmet Used %	Helmet Not Used No.	Helmet Not Used %
6-13	2	50.0	2	50.0
14-15	19	86.4	3	13.6
16-17	25	58.1	18	41.9
18-20	14	20.9	53	79.1
21-24	16	17.0	78	83.0
25-34	23	17.2	111	82.8
35-44	13	24.1	41	75.9
45 & Over	15	50.0	15	50.0
Unknown	0	0.0	1	100.0
Total	127	28.3	322	71.7

Note: Percentages are row percents.

Source: Department of Transportation: Accident Records

Pedestrians

There were fifteen pedestrians killed and 165 injured in motor vehicle accidents during 1986 (see TABLE 3-21). The youngest pedestrian killed was 2 years old while the oldest was 83. Of the injured pedestrians, one-third were under 14 years of age and 48.5 percent were under 20 years of age. Eighty-seven percent of the pedestrian injuries happened in urban areas (see TABLE 3-23).

Since 1970 there has been an average of 18 pedestrians killed in accidents each year (see TABLE 2-11). Illegally in roadway, failure to yield to vehicle, and drinking were the three most common contributing circumstances in pedestrian fatalities. There were no contributing circumstances in 100 or 56 percent of the pedestrian injuries. Officers reported that 80 percent or eight of the ten adult pedestrians killed had been drinking alcohol (see TABLE 3-22). Additionally, one child pedestrian killed had been drinking. The average BAC of those pedestrians who had been drinking was 0.26 percent with BACs ranging from 0.02 percent to 0.50 percent.

TABLE 3-21
AGE OF PEDESTRIANS IN TRAFFIC ACCIDENTS
1986

Age	Fatalities No.	Fatalities %	Injuries No.	Injuries %
0-5	4	26.7	21	12.7
6-13	1	6.7	35	21.2
14-19	0	0.0	24	14.5
20-24	2	13.3	11	6.7
25-34	4	26.7	15	9.1
35-44	1	6.7	13	7.9
45-54	1	6.7	12	7.3
55-64	0	0.0	8	4.8
65 & Over	2	13.3	25	15.2
Unknown	0	0.0	1	0.6
Total	15	100	165	100

Source: Department of Transportation: Accident Records

TABLE 3-22
ALCOHOL INVOLVEMENT BY PEDESTRIANS
1986

Alcohol Involvement	Fatalities No.	Fatalities %	Injuries No.	Injuries %
Alcohol or Drugs	9	60.0	16	9.7
No Alcohol	5	33.3	143	86.7
Unknown	1	6.7	6	3.6
Total	15	100	165	100

Source: Department of Transportation: Accident Records

TABLE 3-23
RURAL vs. URBAN PEDESTRIAN ACCIDENTS
1986

	Fatalities	Injuries
Rural	8	21
Urban	7	144
Total	15	165

Source: Department of Transportation: Accident Records

Bicycles

There was one bicycle driver killed and 113 injured in reported motor vehicle accidents during 1986 (see TABLE 3-24). There were two bicycle passengers injured during 1986. The leading factor in bicycle involved crashes was the bicycle driver failing to yield to a motor vehicle. Other bicyclist contributing circumstances were improper turning, being on the wrong side of the road, illegally in the roadway, and failing to stop for stop sign or flashing red light. Forty of the bicycle drivers in accidents had no contributing circumstances. The yearly, 1970-1986, trend of bicycle fatalities and injuries is provided in TABLE 2-12.

TABLE 3-24
AGE OF BICYCLE DRIVERS IN TRAFFIC ACCIDENTS
1986

	Fatalities	Injuries	
	Number	Number	%
0-5	0	10	8.8
6-13	0	55	48.7
14-19	0	27	23.9
20-24	0	10	8.8
25-34	1	8	7.1
35-44	0	1	0.9
45-54	0	0	0.0
55-64	0	1	0.9
65 & Over	0	0	0.0
Unknown	0	1	0.9
Total	1	113	100

Source: Department of Transportation: Accident Records

IV. GLOSSARY OF TERMS

Reportable Traffic Accident: motor vehicle traffic accident which involves death, injury or property damage to an apparent extent of five hundred dollars or more to any one person's property or accumulated property damage of one thousand dollars per accident.

Fatal Accident: motor vehicle traffic accident in which at least one person dies as the result of the accident and dies within 30 days of the date of the accident.

Injury Accident: motor vehicle accident in which at least one person was injured and no one was killed.

Property Damage Only (PDO) Accident: motor vehicle accident in which no one was killed or injured but there was property damage to an apparent extent of five hundred dollars or more to any one person's property or accumulated property damage of one thousand dollars per accident.

Fatality Rate: number of traffic fatalities per 100 million vehicle miles traveled.

Alcohol Involved Accident (1983-1986): at least one driver, pedestrian, or bicycle driver had been drinking in the opinion of the investigating officer.

Economic Loss: the calculable costs of motor vehicle accidents are wage loss, medical expense, insurance administration cost, and property damage. (Source: Estimating the Costs of Accidents 1985, National Safety Council)

SOUTH Dakota
Department of Commerce and Regulation
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